

# MOTOR AGE

VOLUME XXII

CHICAGO, AUGUST 8, 1912

NUMBER 6

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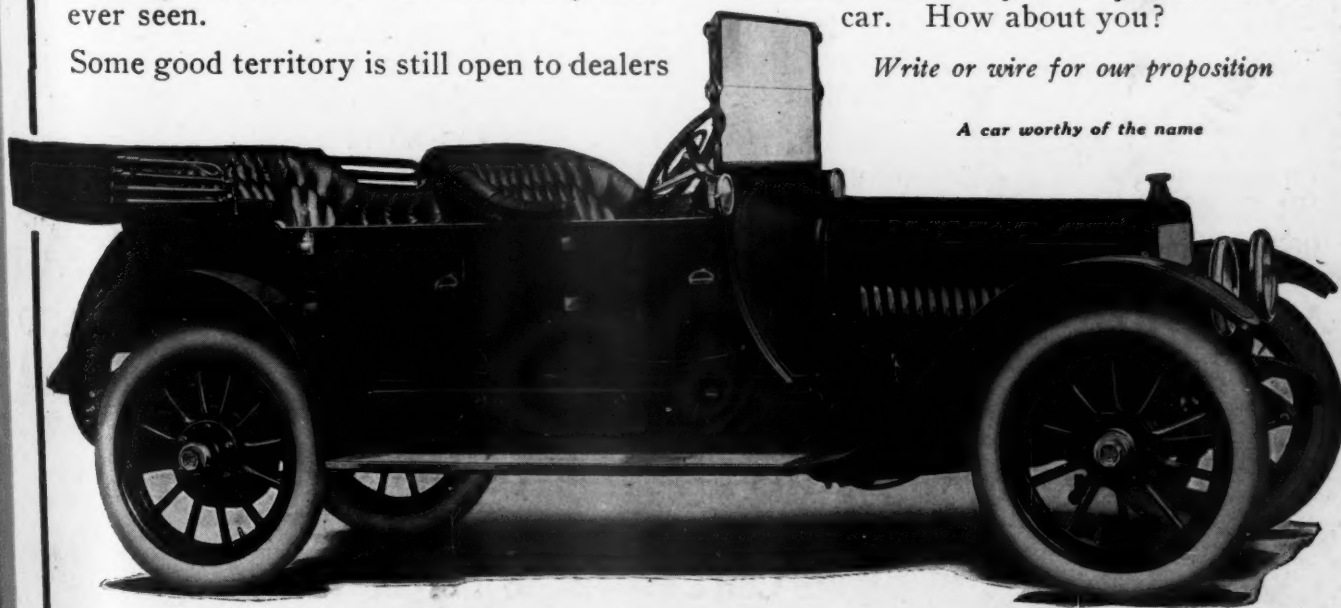
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# MOTOR AGE

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Volume XXII

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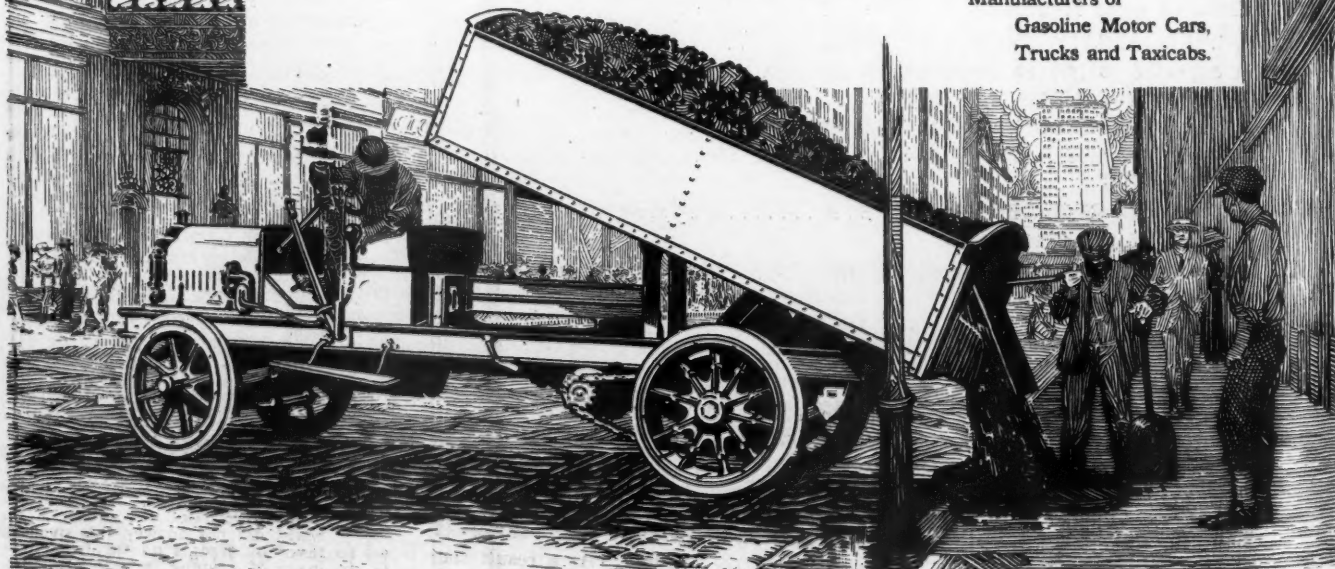
**T**HE purchaser of a motor truck, to be secure in his investment, must consider not only the construction of the truck and its adaptability to his business conditions, but also the financial responsibility and the integrity of the truck manufacturer behind it.

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# MOTOR AGE

## Traffic Rules for the Smaller Cities



*Motor Age Sounds Chiefs of Police as to Their Needs in This Line and Discovers Kansas City Has Regulations That Seem to Be Closest the Ideal*

By William B. Stout

**M**ORE uniform traffic laws for our larger cities is the demand of the hour among motorists.

More intelligent control of traffic, both pedestrian and vehicle, as a real need in all our congested communities.

With nothing but horse and foot traffic the rules of the past have sufficed for old conditions, but with the adoption of the motor vehicle for both freight and passenger work, with the greater added expense of idle time, there must be not only adopted but enforced, regulations which shall better care for the new traffic and its sane movement, and at the same time present a uniformity in all cities which shall not confuse the tourist or traveller who drives his car in many cities. Reform is the need of the hour.

As motor cars have come into use new regulations have been demanded in our cities to fit them; slower vehicles have been forced to keep to the curb and, depending on the size of the city and the degree of traffic congestion and laws have been framed to fit each individual case without any attempt at uniformity throughout the country. As a result tourists in passing through different cities,

ignorant of the laws of each particular place are coming into contact with the police through lack of knowledge of the local regulations.

It is time for the motorist to insist on the adoption of uniform laws for traffic in all the larger cities, but first must be determined the most logical code. As a means of arriving at a definite conclusion as to what regulations were necessary and advisable in the average case a series of questions was sent by Motor Age to the traffic heads of over 100 cities whose population ran between 25,000 and 200,000 asking for information as to what laws were in use already in each locality and what laws were favored. The entire list of questions is shown in another column. The tabulation of the replies received from forty different representative cities shows the sentiment, as follows:

- |                                                                                    |    |
|------------------------------------------------------------------------------------|----|
| 1—In favor of requiring slow vehicles to keep to the curb.....                     | 39 |
| Opposed .....                                                                      | 1  |
| 2—In favor of stops with right side only to curb .....                             | 40 |
| 3—In favor of lights on all vehicles at night .....                                | 20 |
| Opposed .....                                                                      | 10 |
| Doubtful .....                                                                     | 2  |
| Eight did not answer this question.                                                |    |
| 4—In favor of signals on turning.....                                              | 40 |
| 5—In favor of keeping outside of point of street intersection in turning to left.. | 40 |

6—In favor of turning around only at street intersections .....	18
Opposed .....	12
Doubtful .....	3
Seventeen did not answer this question.	
7—In favor of prohibiting stops near fire hydrants .....	20
Opposed .....	13
Seven did not answer this question.	
8—In favor of special parking spaces for waiting vehicles .....	20
Opposed .....	5
Doubtful .....	9
Six did not answer this question.	
14—Cities with right of way in certain directions .....	8
Opposed .....	16
Doubtful .....	3
Thirteen did not answer this question.	
15—In favor of regulating pedestrian traffic .....	20
Opposed .....	5
Doubtful .....	2
Thirteen did not answer this question.	

Question 17 asking for suggestions and regulations favored brought out many points not covered by the questions themselves, which points will be taken up later. Those listed as doubtful mentioned the idea as being practicable for some communities but not in their own particular cities.

#### Unanimous on Three Points

It will be noticed, however, that all were in favor of three of the regulations no matter what their local conditions—the provision requiring vehicles to stop only on the right hand side of the road with the right side of the vehicle to the curb; the rule in regard to signalling before a turn; and the requirement of keeping to the outside of the intersecting point of the streets on making a left turn. The first rule of slow-moving vehicles keeping to the right curb only lost one vote—that of Atlantic City, N. J., whose local situation does not seem to require it.

Half of the cities named favored lights on both horse and motor vehicles at night, although six of these specified that only public vehicles such as cabs were included in the horse section of the regulation. Ten cities opposed the rule as unnecessary on well-lighted streets while two thought it a good rule but had not adopted it. This question is open to discussion, for there is truth on both sides.

For city work in large communities the well-lighted streets do not make the carry-

## Traffic Tendencies

*THE chief tendency in traffic control in cities is toward greater recognition of pedestrian hindrances, and control of foot traffic.*

*Pedestrians are forbidden to cross diagonally at street intersections and between crossings pass over thoroughfares at their own risk.*

*In Paris it is incumbent upon the individual to avoid being hit. There is a tendency toward some such ruling in the larger American cities. In Amsterdam pedestrians on sidewalks must keep to the right.*

*In smaller communities pedestrian traffic is not controlled.*

*The following are specimen cases of especial rulings in force in different cities but not in all which are worth notice:*

*All vehicles are required in a few cities to emerge from stables, garages or alleys at walking speed.*

*In the District of Columbia there is a penalty for collision and a vehicle turning to the left at street intersections need only allow room on the left for one vehicle to pass between itself and curb. It is not required to go around the intersecting point of the two streets.*

*Several cities have a rule forbidding the sounding of the horn or signal for a "machine-is-in-waiting" signal.*

*Many cities forbid paper or cloth signs on vehicles which might flap and scare horses.*

*Some cities forbid two persons riding on bicycles or motor cycles built for one.*

*Some cities forbid any person riding in any vehicle in front of the driver.*

*A number of cities require tail lights for motor cycles, others none.*

*All of this variance is confusing. The tourist is at sea in a new city as to regulations. Time will lead to a more uniform code of regulations.*

ing of lights by horse vehicles so imperative, but with the smaller cities where a motor run means a trip out into the country where there are no street lights, the wagon or buggy ahead without lights is a menace. In these smaller localities the

lighting of all road vehicles is almost imperative since cars are so numerous.

Eight replies dodged this question by ignoring it.

Many arguments were presented in the answers received pro and con as to the idea of turning only at street intersections.

Terre Haute, Ind., is opposed to this requirement on the ground that "there is usually not so much traffic in the middle of the block as there is at the intersection."

Duluth, Minn., favors this regulation "at points where traffic is regulated by police."

Rockford, Ill., favors the rule since "traffic is slower between corners and gives the driver a better chance to turn."

Dayton, O., does not need such a rule since its streets are very wide with plenty of room.

Binghamton, N. Y., favors the plan, calling attention to the fact that drivers are more watchful and cautious at street intersections, thus lessening the danger of collision present when turning in the middle of the block where vehicles travel at higher speed.

Sacramento, Cal., favors the rule as keeping traffic more uniform, and easier to watch. Salt Lake City opposes the plan.

#### Fear Congestion in Traffic

The chief of police of Fitchburg, Mass., suggests that the requirement "would only increase congestion at points already too crowded and that if a vehicle is able to turn without backing it should be allowed to do so anywhere. If not it should go around the block to turn."

The police chief of Pueblo, Colo., also mentions the need of greater watchfulness of drivers at street corners and hence favors turning at that point.

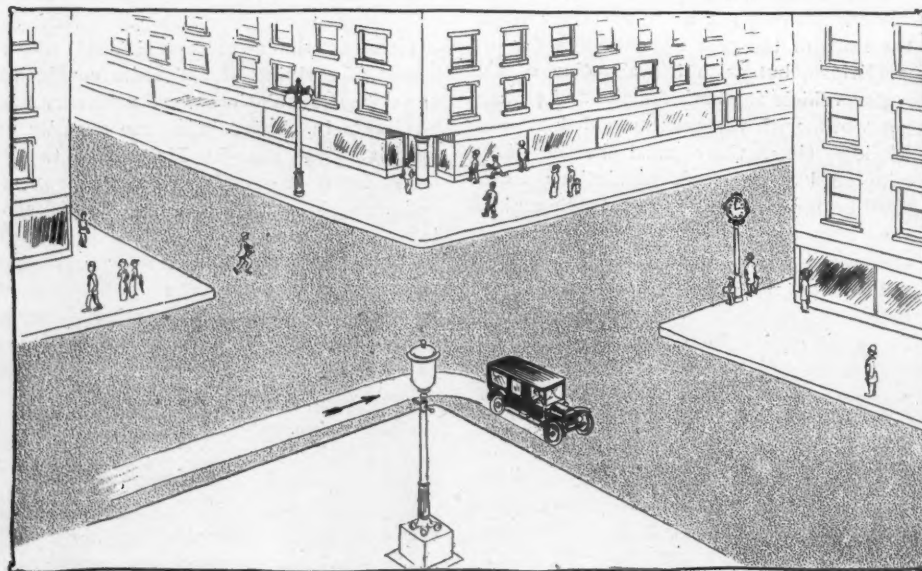
Thus are suggested different angles of the same problem as viewed from different points of the country. There are arguments bearing out both sides but it would seem that for ordinary conditions and to lessen corner congestion vehicles might be allowed to turn anywhere, so long so they did not have to back and thus hinder and endanger other traffic. Kansas City has such a provision; so have Peoria, Ill., and Cincinnati, O.

The rule prohibiting the leaving of cars or vehicles at the curb within a given radius of fire hydrants received the support of twenty of those answering. No arguments, however, were brought up on either side, this question seeming to be treated as of minor importance.

The feeling on the question of parking spaces for vehicles can best be shown by quoting answers:

"They should be parked on one side of the street only and backed to the curb at a 45-degree angle so as to take as small a space as possible."—Shreveport, La.

"Should be allowed outside of congested



IN TURNING TO THE RIGHT KEEP AS NEAR THE RIGHT HAND CURB AS POSSIBLE



district or outside of business hours."—Manchester, N. H.

"Yes, it works better to have the parking space open and to call by numbers."—Atlantic City, N. J.

"Makes it easier for the officers to handle traffic on certain streets."—Woonsocket, R. I.

"Spaces are allotted for this purpose, therefore avoiding confusion and delaying of traffic."—Richmond, Va.

"No. Believe the police should regulate these conditions according to circum-

## Questions Asked by Motor Age

1—Are you in favor of a traffic ordinance requiring slow moving vehicles keeping close to curb? (Give reasons).....

2—Are you in favor of compelling all vehicle, horse or motor driven, requiring to stop to do so with right side (only) to curb? (Give reasons).....

3—Are you in favor of all horse vehicles carrying a light when on streets between sunset and sunrise, said light to show yellow or white in front and red in rear? (Give reasons).....

4—Do you favor a driver of horse or motor being compelled to look to the rear before turning left across a street in the middle of a block or at a street intersection, or to require him to give a signal by raising the hand vertically or extending it horizontally so as to be seen by vehicles following closely behind? (Give reasons).....

5—Do you favor making it imperative for horse and motor vehicles to keep outside of the center point of street intersection when turning to left? (Give reasons).....

6—Do you favor horse or motor vehicles turning around on streets only at street intersections? (Give reasons).....

7—Do you insist on at present strict observance of not permitting horse or motor vehicles standing beside curb within a distance of 30 feet (more or less) from a water hydrant for fire protection purposes?.....

8—Do you favor the establishment of parking space along the curb on certain streets for horse or motor vehicles to remain in while waiting for church services, theaters, dinners, business engagements, etc.? (State your views definitely).....

9—What is the total number of men on your police force?.....

10—Total policemen on day work?.....

11—Total policemen on night work?.....

12—Total policemen on day traffic?.....

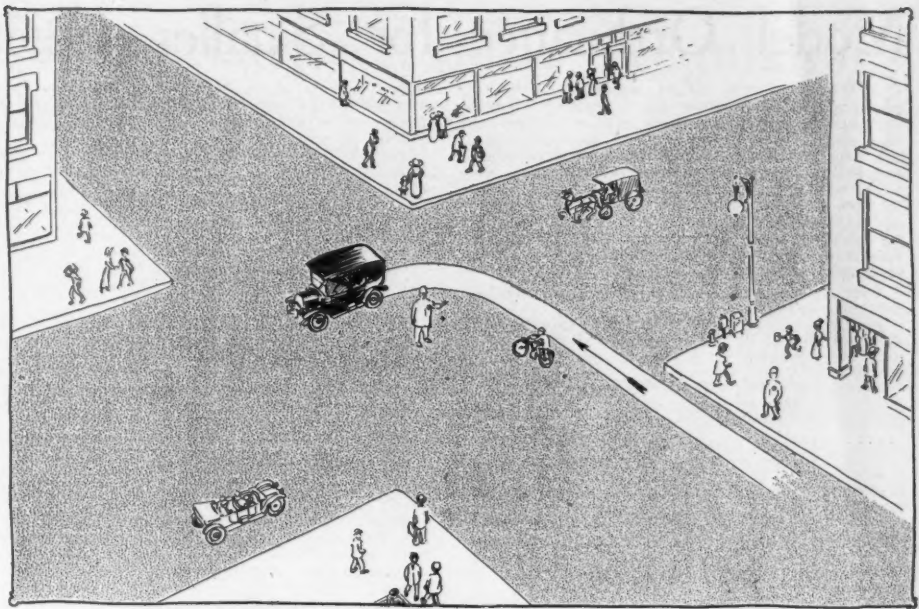
13—Number of police you think necessary for proper control of traffic in your city?.....

14—Have you a recognized rule governing right of way of traffic in different directions at street intersections: To explain, has north and south traffic the right of way over east and west traffic, or vice versa? (State your views).....

15—At how many street intersections in your city should a traffic policeman be stationed with whistle to regulate vehicles, to give right of way to north and south vehicles at one time and to east and west at other?.....

16—Do you favor regulation of pedestrian traffic at street intersections where vehicle traffic is regulated as in section 15?.....

17—What additional regulations do you favor (State definitely).....



A VEHICLE TURNING TO THE LEFT SHALL PASS AROUND THE CENTER OF INTERSECTION OF TWO STREETS

stances. They have the power to act here."—Albany, N. Y.

"Yes. It allows freedom of other traffic and means quick clearance when owners come to get their machines, to drive away."—Dayton, O.

These answers seem to show two different viewpoints; one that of the theater proposition and the matter of getting the line away after the show, and the other the idea of car parking in the city during business hours. In nearly all cities there are streets where cars can stand and others where they are not permitted. Ordinarily the handling of the machines after the theaters is in the hands of the police.

The most important question, especially in regard to the larger cities is that of pedestrian control. Few cities have taken this up as yet though twenty in the list given express themselves favorably. Only five are opposed.

### Controlling Pedestrians

In the list favorable are Dayton, O.; Richmond, Va.; Omaha, Nebr.; Sacramento, Cal.; Salt Lake City, Utah; Fall River, Mass.; Kingston, N. Y.; Watertown, N. Y.; Woonsocket, R. I.; Everett, Wash.; Waterbury, Conn.; Atlantic City, N. J.; etc., cities of a size to realize traffic congestion and treat it as a hindering factor. A pedestrian clause forcing those on foot to the use of sidewalks and crossings alone will be the eventual rule, with no cutting across corners at street intersections.

In looking over the regulations of all of the cities represented in the list of replies important regulations not mentioned in the questions are found some practical and some out of date.

"Horse-drawn vehicles shall have right of way over power-driven vehicles, except street cars," says the Peoria, Ill., regulation.

Nearly all cities have a muffler ordi-

nance and also a rule against dripping of oil on the highway; also rules as to right of way of fire, police, ambulance and repair apparatus. Few cities of size now allow a vehicle to be backed up to a curb except during the actual time of loading or unloading and then in some cases with a time limit.

### Peculiar Regulations

A number of peculiar and unusual regulations show themselves in special suggestions which are undoubtedly the result of a demand made by conditions in the certain localities involved.

Alameda, Cal., has a provision making it unlawful to draw vehicles in tandem between 6 A. M. and 9 P. M., or any freight vehicle drawn by more than four horses, or any freight vehicle which with its load shall exceed 24 feet in length or the total width of which shall exceed 8 feet. This rule applies to the central district only.

Knoxville, Tenn., enforces a rule demanding the reduction of the power of all street car headlights coming into the city limits to 100 candlepower, and the muffling of the headlight so that the rays are confined to the track ahead and will not blind the drivers of other vehicles. A rule is also enforced to the effect that no motor car shall tow or pull another one or disabled machine with a space of more than 8 feet between the two machines.

Elgin, Ill., has a rule which gives the man on the left at intersecting corners the right of way.

A large percentage of the cities investigated have a rule against the hauling of noisy loads, such as lengths of iron and steel that might strike together and produce a clatter.

Atlantic City, N. J., suggests a law compelling all chauffeurs to pass a test and examination before an inspector before being allowed to operate on city

# Model Ordinance for Smaller Cities

**SECTION 1.** The owner, operators, driver or person in charge of any car, dray, wagon, carriage, buggy, motor cycle, tricycle, bicycle, or the streets of Kansas City, Missouri, shall conform to and observe the following rules and regulations upon all such streets, alleys, avenues, boulevards, park roads and public places in said city.

**Section 2.** The word "vehicle" includes equestrians, led horses and everything on wheels or runners, except street cars and baby carriages.

**Section 3.** The word "horses" includes all domestic animals.

**Section 4.** The word "driver" includes the rider or driver of a horse, the rider of wheels and the operator of a vehicle, motor cycle, or street car.

**Section 5.** The term "congested district," as used in this ordinance, shall include all that portion of the city lying.....

**Section 6.** The roadbeds of highways are primarily intended for vehicles; but pedestrians have the right to cross them in safety, and all drivers of vehicles shall exercise all proper care not to injure pedestrians. Pedestrians when crossing a street shall not carelessly or maliciously interfere with the passage of vehicles.

**Section 7.** Pedestrians crossing any street at the intersections thereof with another street within the congested district, shall pass over such portion of the street as is included within the lines of the sidewalk projected, and not diagonally.

**Section 8.** The driver or person in control of a vehicle in slowing or stopping shall signal those in the rear by raising whip or hand.

**Section 9.** No vehicle shall be turned unless a signal shall previously be given by the whip or hands indicating the direction in which the turn is to be made.

**Section 10.** No person in control of a vehicle shall back the same without ample warning having been given; and, while backing, care must be exercised not to injure those in the rear.

**Section 11.** Police, fire department, fire patrol, United States mail vehicles, and ambulances, shall have the right of way in any street.

**Section 12.** Every person in charge of a vehicle shall pull to the right of the street or road when signaled from a vehicle behind desiring to pass.

**Section 13.** That upon the approach of any fire apparatus, police patrol or ambulance,

every vehicle shall draw up as near as practicable to the right curb of the street and remain at a stand-still until such apparatus, patrol or ambulance shall have passed.

**Section 14.** The driver of a street car shall immediately stop his car and keep it stationary upon the arrival of any fire apparatus.

**Section 15.** Street cars shall have the right of way, between cross streets, over all other vehicles, except as provided in section 11.

**Section 16.** The driver or person in control of any vehicle upon a track in front of a street car shall turn out upon a signal from the motorman or driver of the car.

**Section 17.** Every person in charge of any vehicle upon any street approaching any street car which has stopped or is about to stop for the purpose of taking on or discharging passengers, shall stop or slow down to a reasonably safe rate of speed not exceeding 6 miles per hour, and shall not approach said street car close enough to interfere with passengers boarding and leaving said street car.

**Section 18.** No vehicle or street car shall so occupy any street as to interfere with or interrupt the passage of other cars or vehicles.

**Section 19.** Vehicles and street cars shall not stop on the cross walk so as to interfere with the passage of pedestrians.

**Section 20.** Vehicles shall be driven in a careful manner and with due regard for the safety and convenience of pedestrians and all other vehicles.

**Section 21.** Every person using any vehicle on any street in the city of Kansas City shall operate, drive or ride such vehicle on the portion to the right of the center of the street, except where the right side of the street is in such condition as to be impassable.

**Section 22.** Vehicles moving slowly shall keep as close as possible to the curb on the right, allowing more swiftly moving vehicles free passage to their left.

**Section 23.** A vehicle meeting another shall pass on the right.

**Section 24.** A vehicle overtaking another shall pass on the left side of the overtaken vehicle and not pull over to the right until entirely clear of it.

**Section 25.** A vehicle turning into another street to the right shall turn the corner as near to the right hand curb as possible.

**Section 26.** A vehicle when turning to the left to enter an intersecting street shall not turn until it shall have passed beyond the center of such intersecting street.

**Section 27.** Vehicles crossing from one side of the street to the other shall do so by turn-

ing to the left so as to head in the same direction as the traffic on the street.

**Section 28.** No vehicle shall be turned around upon any street within the congested district unless said vehicle shall first proceed to the next cross street and shall then make the turn to the left after reaching the center of said cross street.

**Section 29.** No vehicle shall stop with its left side to the curb within the congested district or upon any boulevard or parkway.

**Section 30.** No vehicle, unless in an emergency or to allow another vehicle or pedestrian to cross its path, shall stop in the street except near the right hand curb thereof, and so as not to obstruct a crossing.

**Section 31.** On all avenues or streets divided by parkway, walk, sunkenway or viaduct, vehicles shall keep to the right of such division; and red street lights located in the center of driveways at intersections and turns indicate this rule of the road: "Slow down and keep to the right," and this rule of the road must be complied with on all intersections and turns of boulevards and parkways whether lights are so located or not.

**Section 32.** No vehicle shall be left standing in front of, or within 25 feet of either side of the entrance to any theater, church, or any public or office building which is not less than three stories high, except when taking on or discharging passengers or freight, and then only for such length of time as is necessary for such purpose.

**Section 33.** No vehicle shall remain upon any public street for the purpose of receiving and discharging freight between the hours of 9 a. m. and 7 p. m., whenever there is a public alley which has connections with the premises where said freight is to be delivered or received and such delivery or receipt is practicable through said alley.

**Section 34.** No vehicle shall stand within the intersection of any streets in the congested district or within 10 feet from the intersecting roadway.

**Section 35.** No vehicle, except apparatus and vehicles of fire, police, hospital departments and United States mail, shall be driven through a procession except with the permission of a police officer.

**Section 36.** At theaters and public gatherings, or under unusual circumstances, vehicles shall stand or move as directed by the police.

**Section 37.** Vehicles shall not stand or travel two or more abreast in any street.

**Section 38.** No horse nor mule, nor any animal attached to a vehicle shall be permitted to stand upon any portion of any street, boulevard, parkway, avenue or park road of said city, unless the driver thereof is in charge of and accompanies the same, or unless such animal be securely hitched to a hitch weight or hitching post; nor shall any vehicle, horse,

streets. Such a rule is of course already enforced in many of the larger cities.

Wilkes-Barre, Pa., is one of the cities having a rule requiring a standing vehicle to give way to one about to load or unload, to take on or to leave passengers. Five cities in the list forbid traffic cutting through any processions.

The chief of police of Manchester, N. H., is dissatisfied with the bulb horn as a means of signalling, favoring something quicker acting and more insistent.

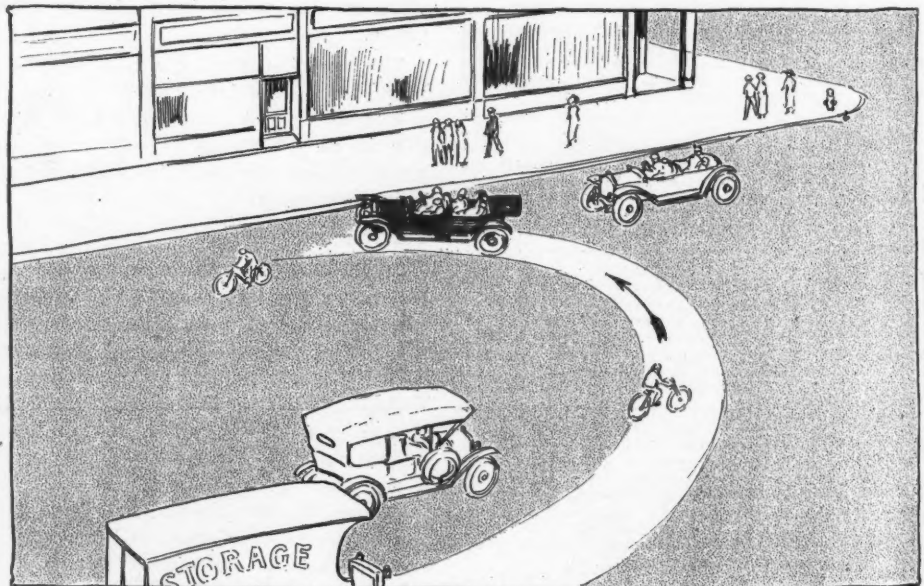
The Sacramento chief of police makes the following addition to the list of questions sent him:

## Suggestions from Sacramento

"All vehicles should be compelled to stop at least 15 feet behind street cars while street cars are stopped to let passengers on or off. No vehicle should be allowed to pass a street car on the left-hand side. All motor cars and motorcycles should be compelled to keep their mufflers closed."

Everett, Mass., suggests conditions where traffic should be confined to one direction in narrow thoroughfares.

"We are doing fine with what we have," says Cedar Rapids, Ia. "Some cities have so many regulations controlling traffic that the officers or the citizens



IN TURNING ALWAYS TURN TO THE LEFT SO AS TO HEAD IN THE DIRECTION OF STREET TRAFFIC ON THAT SIDE OF THE STREET

have never had time to learn them all."

These are merely listed ideas from different localities, some of the suggestions already included in the traffic codes of many cities, but the viewpoint of the different sections of the country and differ-

ent sizes of communities makes the suggestions interesting.

Of all the regulations submitted there was none more comprehensive or workable than that of Kansas City, Mo. Kansas City is a little larger than the limit



mule or animal be permitted to stand upon any boulevard, parkway, avenue, street or park road to the obstruction of the same or to the inconvenience of travel.

Section 39. No horse shall be unhitched in any street or highway unless secured by a halter.

Section 40. No person shall in any street or highway remove any part of a vehicle or any part of the harness of a horse without first unhitching the horse or horses attached to said vehicle.

Section 41. No one shall ride or jump any vehicle without the consent of the driver; and no person when riding shall allow any part of the body to protrude beyond the limits of the vehicle, nor shall any person hang on to any vehicle whatsoever.

Section 42. No person shall drive a vehicle loaded with iron or other material likely to produce a great annoying sound without using proper deafening substances.

Section 43. No vehicle shall be left standing in a street or alley at night without light or lights so displayed as to be visible from any direction.

Section 44. A vehicle shall remain backed up to a curb only long enough to be loaded or unloaded.

Section 45. Horses attached to vehicles and the shafts of unhitched vehicles, when backed up to the curbs, shall be turned at right angles to the vehicles or at as nearly this angle as possible.

Section 46. When taking up or discharging freight or passengers, vehicles within the congested district shall be headed in the direction of traffic on the right of the roadway. So far as practicable, freight, coal and ice wagons and other heavy traffic shall be unloaded from the right side and not from the end of the wagon and shall be drawn in close to the curb.

Section 47. No person operating a self-propelled vehicle shall permit the motors of same to operate in such a manner as to visibly emit an unduly great amount of steam, smoke or products of combustion from exhaust pipes or openings.

Section 48. No person when driving a vehicle with a horse or horses attached thereto, shall cease from holding the reins in his hands to guide and restrain the same; nor, when not riding, cease from walking by the head of the shaft or wheel-horse, either holding or keeping within reach of the bridle or halter thereof.

Section 49. Every hackney, carriage, cab or cabriolet used for purposes of hire, when driven on the streets between the hours of sunset and sunrise, shall have fixed on some conspicuous part of the outer side thereof, two lighted lamps, with plain glass front and sides on which shall be painted in legible figures, at least one inch long, the registry number thereof; and shall also exhibit at least one red light visible from the rear. Every motor car, when operated upon any public street, boulevard,

## Kansas City's Traffic Regulations

parkway or park road, shall carry, between the hours of sunset and sunrise, at least one lighted lamp showing white, visible at least 200 feet in the direction towards which the motor car is proceeding, and shall also exhibit at least one red light visible in the reverse direction. All other vehicles, motor cycles, bicycles, tricycles and velocipedes, except draw vehicles, while in use on the streets, boulevards, parkways or park roads, between the hours of sunset and sunrise, shall display one or more lights on the outside of such vehicle, so as to be distinctly visible 100 feet from both the front and the rear; if but one light shall be displayed upon such vehicle, it shall be placed on the left side.

Section 50. Every motor car, motor vehicle or motor cycle using gasoline or other explosive mixture as a motive power, shall use a "muffler" which shall be sufficient to deaden the sound of the explosions, and such muffler shall not be disconnected or cut out while such motor car, motor vehicle or motor cycle is being operated upon any street or avenue, boulevard, parkway or park road within the city of.....

Section 51. Every bicycle, tricycle, velocipede, automobile, motor car, motor truck, motor cycle, and other horseless vehicle, car, engine or machine, except baby-carts and toy-wagons, in use upon the streets of Kansas City, Missouri..... shall have attached thereto, a gong, bell, horn or other adequate signal in good working order and of proper size and character sufficient to give warning of the approach of such vehicle, car, engine or machine to pedestrians and to riders and drivers of other vehicles and to persons entering or leaving street cars; but such gongs, bells, horns and other signals shall not be sounded except when necessary to give warning; PROVIDED, that no such gong, bell, horn or other signal shall produce a sound unusually loud, annoying or of distressing character, or such as will frighten pedestrians or animals; or extreme noises, as "sirens" or similar instruments that produce unusually loud, annoying or distressing sounds; PROVIDED FURTHER, that this section shall not apply to public ambulances, vehicles belonging to fire or police departments of the city, or vehicles required to respond to alarms of fire or other emergency calls.

Section 52. Every person operating a motor vehicle on the public streets, boulevards or parkways or park roads within the city, shall drive the same in a careful and prudent manner, and a rate of speed that shall endanger the property of another, or the life or limb of any person or persons; provided that driving in excess of the following rates of speed for a

distance of more than two hundred feet shall be presumptive evidence of driving at a rate of speed which is not careful and prudent.

(a) Twelve miles per hour on..... and 15 miles per hour on all other park roads within any public park of the city.

(b) Fifteen miles per hour upon streets, avenues and boulevards or parkways within the congested district.

(c) Twenty miles per hour upon all other streets, roads, avenues, boulevards, parkways or parts thereof within the limits of.....

provided, however, that in passing any street intersection, crossing or cross walk, within the limits of..... the rate of speed for driving shall not exceed 10 miles per hour when any person or vehicle is upon said intersection, crossing or cross walk, with whom or with which there is or may be danger of collision.

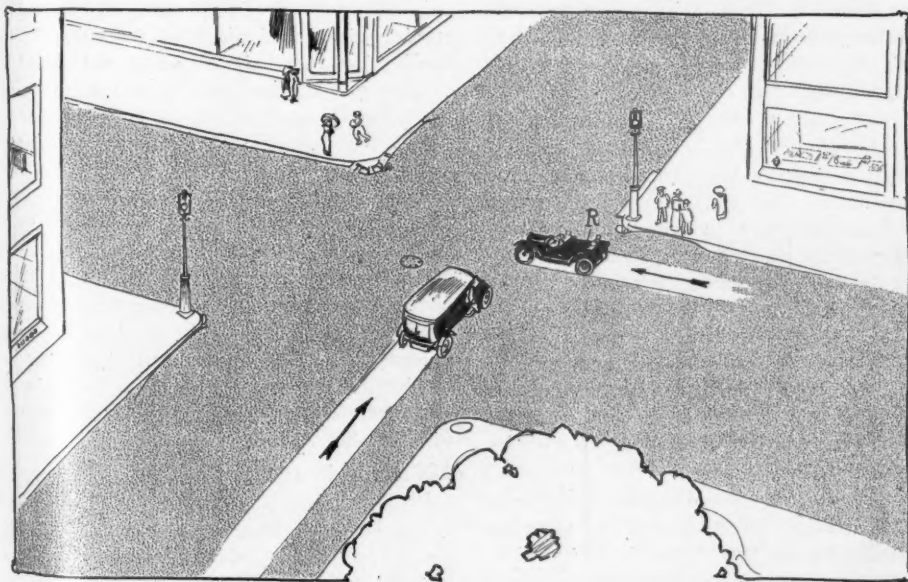
Section 53. No person shall drive any public or private automobile, motor car, motor cycle or self-propelled vehicle who is less than 18 years of age.

Section 54. Between the hours of 7 a. m. and 7 p. m., no vehicle shall remain stationary for a longer period than 60 minutes within the district bounded by north side of....., the south side of....., the west side of..... and the east side of..... except for the purpose of receiving and delivering passengers and freight, and when said 60 minutes shall have expired and said vehicle shall not have been moved for a greater distance than one block, then it shall be construed to have remained stationary.

Section 55. That it shall be the duty of the police department of the city of Kansas City, Missouri..... to enforce all the provisions and terms of this ordinance, and to that end, every person driving, operating or propelling any vehicle, shall stop the same immediately upon the request or upon the signal from a police officer, such signal to be given by the officer raising his hand, club, or blowing his whistle.

Section 56. Any person who shall violate any provision of this ordinance shall, upon a first conviction thereof, be punished by a fine of not less than one nor more than \$200; upon a second conviction, shall be fined not less than \$10 nor more than \$200; and upon a third conviction thereof shall be fined not less than \$25 nor more than \$200.

Section 57. All ordinances, or parts of ordinances, in conflict with this ordinance, are, in so far as they so conflict, hereby repealed.



IT IS THE RULE OF THE ROAD THAT AT STREET INTERSECTIONS RIGHT HAND VEHICLE HAS THE RIGHT OF WAY

of 200,000 placed by Motor Age, but it would seem as if these regulations would be suitable for smaller cities, being typical of the rules in force in the cities under 200,000. In these rules are included the best of nearly all the suggestions made,

and it would seem to fit almost every requirement of ordinary traffic. The regulations for Cincinnati and several other cities of larger size clearly follow it and yet it is not too unwieldy for smaller places having their own traffic problems.

The little traffic folder sent out by the police department of Kansas City is published on pages 8 and 9.

It will be noted that sections 6 and 7 related to the control of pedestrians. This item is ordinarily not so important with smaller cities but is coming to be recognized even there as an important item of traffic congestion. Delays at street corners especially may be largely due to the hindrance of foot traffic dodging in all directions, not only hindering in itself but calling for increasing watchfulness on the part of the drivers.

### Holding Pedestrians in Check

With the increase in value of idle time of running as the motor truck is more generally adopted there will come a more general recognition of the pedestrian branch of street traffic and more stringent rules in regard to its control. The regulation against crossing intersections of downtown streets diagonally already is being enforced in several cities.

Section 10 in relation to backing of vehicles, is included in but very few of the city regulations examined.

The clause of section 17 relating to vehicles near stopped street cars is not sufficiently strong for a number of the larger cities.

# Norman Church Explains the Atlas Deal

Pacific Coast Tradesman Tells How He Became Interested in Bidding for Engine Plant in Indianapolis—Claims Plans Upset by the Everitt People Desiring to Get In

CHICAGO, Aug. 3—The deal between Norman W. Church of Los Angeles, Cal., and Walter E. Flanders of Detroit in connection with the plant of the Atlas Engine Works of Indianapolis has been called off and following the announcement Mr. Church has told of the negotiations which, it was expected, would result in the purchase of the Atlas Engine Works and the occupation of the big factory of the Flanders Motor Car Co., which was to have been organized for the purpose of turning out a car to sell at \$1,000 or under.

"About May 1 information reached me through banking interests that it would be possible to secure control of the Atlas plant," says Mr. Church. "I knew the factory and its possibilities and I realized what a big thing it would be to get it and turn it into a factory for the production of cheap cars. I first of all talked to W. F. McGuire, then factory superintendent of the Ford Motor Co. of Detroit, and he, too, saw the opportunities. Then we determined to interest Walter E. Flanders, the three of us to swing the deal. Mr. Flanders was agreeable and we proceeded with our plans.

"We determined to use the Flanders prestige to the utmost and decided to call the new concern the Flanders Motor Car Co., Mr. Flanders having discovered that his Studebaker contract did not stop him using his name in other businesses. This was after he had gone into the Everitt deal. When he joined the latter combination he was under the impression that his hands were tied so far as using his name was concerned.

"Investigating affairs at the Atlas plant, we found that it would be necessary to put the concern through a friendly bankruptcy, which was done, and we were prepared to close the deal at the receivers' sale which was held last Monday. I was called from Los Angeles and when I got east I found that the Everitt people had raised an objection to Flanders using his name for the company I was forming, claiming that it was doing them an injustice and robbing them of prestige that should be theirs. The next angle was when they insisted that the entire Everitt company be taken into the Atlas deal. I refused and rather than see the affair go by the boards I offered to withdraw entirely with the financial backing I had, including Mr. McGuire, and leave the field to the Everitt people. This they refused to take up and as I would not let them into the original Church-McGuire-Flanders combination the deal whereby

the Atlas plant was to have been sold last Monday fell through. Mr. Flanders and myself are no longer connected in the deal. I am making this statement in order that the inside facts in connection with the matter may become known."

## KNIGHT-ARGYLL DECISION

London, July 30—Justice Neville, in the course of his judgment in the case of Knight vs. Argyll, announced by cable in last week's Motor Age, said that to claim for the patent for this invention the title of a master patent was, he thought, extravagant. The inventors declared the primary object of their invention to be to provide an improved form of internal combustion engine in which the moving parts should be directly connected and positively acting and the use of poppet valves and springs avoided. They declared, held the court, that the invention consisted in certain features of novelty in the construction, combination, and arrangement of parts, all as fully described and more particularly pointed out in the claims. They then enumerated the parts and declared that either the cylinder described or a member telescoped with it should be operatively connected with the piston, but so far the court had not been told which of those parts was to be moved, the invention being in effect declared to be compatible with the movement of either. They then proceeded to tell the court that in the exemplification of the invention shown in the drawings of the two telescoped parts the cylinder was the one to be moved.

Justice Neville thought as a matter of construction that the exemplification was an exemplification in which one of two alternatives was adopted, but that subject to that the succeeding parts of the specification describe the invention itself, and not merely one way of carrying it into effect. As he read the specification, the invention was for a combination, and not for all means of carrying a new principle into effect nor for a novel application of a principle.

The present case showed the great care which should be exercised in allowing amendments to the claims in a specification, particularly where there was no opposition. The comptroller was doubtless told, as his lordship had been told, that the alteration was merely a verbal one, but clearly it could not have been intended to narrow the claim, he thought. It was, therefore, either wholly immaterial and should have been disallowed on that ground, or it must have been intended to widen the claim and therefore was

illegal, held the court. In the result it had in the present action been relied upon in effect as altering a claim of an obviously limited character into one of the widest possible extent, and his lordship's conclusion was that upon the true construction of the specification the defendants had not infringed.

Justice Neville regarded the action "as a somewhat audacious attempt to resuscitate a patent for an invention of small compass and, to say the most of it, of very moderate utility, and by the help of an amendment to make it cover and embrace a wide field of enterprise in a comparatively modern type of mechanism, and so far as he was concerned the attempt failed and he dismissed the action with costs."

## GOODYEAR MARKETING BONDS

New York, Aug. 5—The Goodyear Tire and Rubber Co. of Akron, Ohio, is marketing the remainder of its authorized issue of \$5,000,000 of 7 per cent cumulative preferred stock through Spencer Trask & Co., of New York. Delivery of the new certificates will begin after September 1, according to the brokers.

The total amount to be disposed of amounts to about \$1,600,000 and the market has stood above par for a long time on this issue. The circular issued by Spencer Trask & Co shows that 80 per cent of the total output of the company consists of pneumatic tires and the estimated gross earnings for the fiscal year ending October 31, 1912, will be in the neighborhood of \$25,000,000, with net applicable to dividends of \$2,500,000. According to the balance sheet submitted in summarized form the assets of the company amount to 200.6 per cent on the preferred stock issue and 138.4 per cent of quick assets.

After January 1, 1915, the company proposes to create a sinking fund sufficient to retire \$250,000 of the preferred stock each year thereafter at or below 120 and dividend by purchase in the open market or by direct call. The preferred issue takes precedence of the common as to both principal and dividends and there is no senior lien against the property that has more than a year to run.

## DECISION IN HORN CASE

Providence, R. I., Aug. 5—Judge Brown of the United States district court, for the district of Rhode Island, has denied the application of the Lovell-MacConnell Mfg. Co. and others for an injunction to prevent the Waite Auto Supply Co. from dealing in Newtowne horns and from dealing in Klaxon and Klaxonet horns, or from dealing in Newtowne horns while at the same time dealing in Klaxon and Klaxonet horns. Affidavits were presented on both sides and arguments were made from both points of view. J. Jerome



# Willys Seeks to Set Aside Gramm Deal

Hahn, solicitor for the defendant company, moved that the application be denied and on July 29 the court held and ordered that the motion for injunction be denied. The main contention of the suit itself will be tried out upon final hearing which will probably be had early in the fall.

## OHIO COMPANY AFFAIRS

Cincinnati, O., Aug. 5—The secretary of state of Ohio has authorized the amalgamation of the Jewel Carriage Co. and the Ohio Motor Car Co., both of Cincinnati. Heretofore the Ohio car was manufactured and sold through the Jewel Carriage Co., but by the change the Jewel Carriage Co. will forever lose its identity and the business will be carried on by the Ohio Motor Car Co., the carriage end of the business having been sold to the American Carriage Co., of Cincinnati, several months ago. This company is also building a plant at Colborne, Ontario, where the Canadian Ohio will be built. The officers of the Ohio Motor Car Co. are Charles F. Pratt, president and general manager; A. E. Schafer, vice-president and factory manager; Charles M. Anderson, secretary; O. M. Bake, treasurer; H. T. Boulden, sales manager, and R. E. Northway, engineer.

## RUTENBER DEAL CLOSED

Marion, Ind., Aug. 5—Confirmation of the report in Motor Age of the reorganization of the Western Motor Co., manufacturer of Rutenber motors, and the fusion of the new blood into its directorate, is confirmed today by an announcement by the Rutenber Motor Co., successor to the above named company. The new firm has been incorporated with a capital of \$1,350,000, with George W. Bowen, of the Bowen Mfg. Co., of Auburn, N. Y., as president, and a large investor. The management remains practically the same, and it is announced that the output of the new organization, after extensive improvements in facilities, will be more than doubled.

## GARFORD-WILLYS DEAL CLOSED

Toledo, O., Aug. 3—The formal taking over of the Garford company's plant at Elyria, O., by the Willys-Overland Co., took place in Toledo, O., on Thursday, when, at a meeting of the Overland directors, John N. Willys was elected president of the Elyria company, which will be known in the future as the Garford department of the Willys-Overland Co. At this meeting, A. L. Garford resigned as president of the company bearing his name, the interests which he owned in it being taken by the Willys-Overland organization. Mr. Willys' full title will be president and general manager of the Garford department, in which capacity he has been acting for some time. The new department will be largely managed from

## Suits Filed in Toledo Against A. L. White and W. T. Agester, Fraud Being Claimed by Overland Man, Who Wants Notes Returned and the Contract Annulled

TOLEDO, O., Aug. 3—A sensational suit was this week filed in the common pleas court at Toledo, O., by John N. Willys against A. L. White, president, and W. T. Agester, treasurer, of the Gramm Motor Truck Co., of Lima, Ohio, asking the court to set aside a contract entered into last April on grounds of fraud.

Mr. Willys alleges that on last April 15, he was induced by certain representations on the part of defendants, to enter into an agreement whereby he was to purchase 400 shares of the stock of the Gramm company at its par value; that he paid to defendants the sum of \$50,000 in cash and gave his promissory notes due one for \$75,000 on August 1, one for \$75,000 due on September 1, one for \$100,000 due on October 1, and one for \$100,000 due on November 1. He alleges that the notes and stock were deposited in the National Bank of Commerce, at Toledo, Ohio, which is also made a party defendant.

Willys claims that at a meeting of the stockholders of the Gramm company, held last September, and which was controlled by White and Agester, the company was authorized to the A. C. W. Realty Co., 1,000 shares of stock, for a fictitious indebtedness, and caused the company to issue a delivery certificate, dated August 1, 1911, without receiving any compensa-

tion therefor. It is claimed that Ira B. Carns, a stockholder in the Gramm company, controls this concern.

It is further alleged by Mr. Willys that at the same meeting a dividend of \$225,000 was declared payable in stock, and a division of stock was authorized when the company had no surplus capital. Shares were then distributed to the number of 750 to the A. W. C. Realty Co., 221 to A. L. White, 150 to W. T. Agester and 196 to I. P. Carns, making a total of 1,142 shares. Willys alleges that White and Agester then voted to themselves respectively 755 and 800 shares of the common stock of the concern, and that the whole amount of 4,000 shares then was sold to him at par.

He states that the company had no surplus to divide but had lost large sums; that it had no legal right to any real estate, but that it occupied the plant under a contract to purchase the property, and that it is indebted in the sum of about \$135,000, none of which facts were made known to him at the time of purchase. He asks the court to grant the relief denied by defendants; that he may have his notes returned to him, that the contract be annulled, and that he may recover the \$50,000 already paid over for the stock in the company.

Toledo. Mr. Willys will retain his office in that city. For some time, the sales departments of the two factories have been operated jointly, and after the first of next month, all departments will be similarly conducted.

## KELLY IN NEW TIRE DEAL

New York, Aug. 5—Charles F. U. Kelly, formerly of the Kelly-Springfield Rubber Co., of Racine, Wis., and Harry E. Field, former president and sales manager of the Hartford Tire and Rubber Works, of Hartford, Conn., and at present president of the Thomas B. Jeffery Co. of New York, have just terminated negotiations with the Lee Tire and Rubber Co., of Conshohocken, Pa., whereby the entire production of tires of both concerns will be marketed by the Kelly-Field Co. Mr. Field will remain with the Rambler people until the expiration of his contract.

## HIGHER RATES TO COAST


Los Angeles, Cal., Aug. 3—The first copy of the transcontinental west bound freight tariff naming rates from all eastern shipping points to southern California points, made its initial appearance July 29. It goes into effect September 2. This

rate sheet points out the fact that the rates on motor cars have been advanced from 10 to 30 cents per 100 pounds. It is estimated that the increase will cost the dealers in Los Angeles in the neighborhood of \$35 a carload. The rates to the east are also to be increased and with the many changes said to affect the shipping of parts, this will mean considerable of a loss in net revenue to the dealers.

## CANADA STOPPING SMUGGLING

Montreal, Que., Aug. 1—Wholesale smuggling of motor cars between the United States and Canada has been going on this summer, and the Canadian customs officials have already punished several offenders while the Canadian manufacturers are bitterly protesting against American-made cars being brought into Canada without payment of duty.

Naturally the majority of dealers in the city who represent United States firms, either deny the charge or refuse to discuss it at all; but the fact remains that Special Customs Officer O'Shea has had a busy time of it all summer working up evidence upon which seizure could be made, and at least one agent, who is interested in a Canadian make of car admits it.



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# MOTOR AGE

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## Reducing Fuel Consumption

**H**OW many miles do you get to the gallon of gasoline with your car? This question is becoming more and more important since gasoline retails at 18 and 20 cents per gallon and in many places as high as 25 cents. With the old-time low rates of fuel little attention was paid to the gasoline bill; the cost of fuel per mile was low compared with the cost of tires or other car expenses. Today there is a change. Tires have been improved, tire mileage has been increased, but gasoline cost has risen. This has turned the owner's attention to the question and it has also turned the attention of carburetor makers to the problem involved. Heretofore with carburetor makers the big aim has been to give speed and flexibility without regard to the cost. Scarcely a driver who tours has not been impressed with the odor of burned fuel given off by cars met on the highways. Occasionally one or two cars will pass without the pungent odor behind it, but they are rare. Every case of the strong pungent odor is an example of poor carburetion; an example of too much fuel for the amount of air used; an example of useless expense to the car owner.

**W**ITH many car owners the extravagant use of gasoline is frequently attributed to the pedal accelerator, which is used almost exclusively for supplying the mixture to the cylinders. The accelerator is greatly abused and is directly responsible for much of the over-consumption of fuel and also to the cost of motor maintenance. On rough roads the driver's foot, controlling the accelerator, is constantly vibrating, and every vibration means a change in motor speed. This gives anything but ideal motor conditions. With the motor speed altered nearly every consecutive second unnecessary strain is placed upon the crankshaft and the other motor parts. At one time the pedal is depressed to the full, placing enormous strains on the motor parts, and perhaps a second later the entire fuel supply is as suddenly cut off. This situation has led many owners to criticize the accelerator, and it is responsible today for many owners using the accelerator only in emergency cases when the hands are occupied in other duties. There are many drivers who use the steering wheel control exclusively for road driving, and in every case the motor performance and condition is one to attract special attention of the onlookers.

**T**HERE is not any reason why the accelerator condition cannot be improved. With a host of cars its construction can be improved so that its action is more constant and not so at the mercy of the road irregularities. One or two makers have used such designs in the past and the wonder is that they have not been generally imitated by other makers, as nothing patentable was connected with their makeup. With such designs, of wedge-shaped contour, the driver's foot rests firmly on the car floor and increases in speed are accomplished by sliding the foot forward on the floor and decreases by moving it backward. True, it is not so easy to move the foot in this way as it is to raise and lower it by pivoting on the heel, but for the extra work the results obtained are important. Other commendable pedal designs have been brought out which call for a side movement of the foot, but their following has not grown very much. The accelerator pedal has come into general use and is here to stay, but it will have to be improved if for no other reason than the extra fuel it uses and the unnecessary strains it places on the motors.

## Greater Tire Attention

**I**N spite of the fact that scores—in fact, thousands—of car owners look upon tires as the most costly part of car operation, yet it is questionable if there is any other part of the car which they neglect with such consistency. Examples are seen on every hand. An owner of a touring car generally carrying two people will, nine times out of ten, take a load of four or five and go on a trip without increasing his tire pressure. This same owner will rarely have the right side tires inflated more than the left side ones, although it is a certainty that for 90 per cent of the time the car is running the right side wheels carry a heavier load than the left side ones.

**I**F you ask 50 per cent of the owners why they persist in doing such work they invariably give the answer that the tires are guaranteed for 3,500 miles and they are content with the tire cost on that basis; they further answer that it is a difficult job to get the tire pump out from under the rear seat and so they often fail to keep the inflation proper solely because of the inconvenience of the tire pump and the work necessary for inflation with it. It is commendable that many car makers are adding the power air pump to the gearbox or motor of their car, and it is to be hoped that soon inflating tires will be as simple a job as taking on gasoline or oil. Today the tire work is one objected to strenuously by the owner-driver. He is opposed to it and actually pays dearly for his neglect.

**T**IRE makers can help car makers in improving the tire situation. There is not any reason why a tire should not be stamped with the maximum load it should carry and also the air pressure to which it should be inflated. Tire makers issue booklets showing the necessary air pressures, but it is a rare occurrence that the owner-driver has such a list with him when he is inflating his tires. Garagemen can assist in directing attention to proper tire inflation by posting near to the air line for tire inflation the schedules of inflation, but even this will be formidable because of the great difference in pressure for the same tire sizes as recommended by different tire makers. A start must be made and it should be soon.

**A**DDED tire mileage can be obtained if more attention is given to the filling up of surface cracks with the direct object of preventing the water getting in and so injuring the fabric and starting the destruction of the casing. It is quite uncommon for an owner to pay any attention to the hole in the casing caused by a nail puncture, and yet this hole is often sufficient to let the water reach the tire fabric and pave the way for a blowout at a later date. There are on the market today many tire surface preparations intended to meet the needs of such cases, but they are rarely used. The driver imagines that the elasticity of the rubber is such that the hole will be permanently closed and that there is not any opportunity for the water entering. Quite frequently cuts a fraction of an inch in length are made on the tire tread or side walls. These should receive early attention, and it may be that a small garage vulcanizer is necessary. One thing is necessary, namely, that they should receive attention, each particular case perhaps dictating the nature of the exact treatment needed. In practically every case it will be up to the driver to see that the work is done, as it is rare that a tire repair man or garage man will recommend or insist on such work.



# June Export Report Sensational One

WASHINGTON, D. C., Aug. 3—The exports of motor cars during the fiscal year ended June 30 reached the enormous number of 21,757, valued at \$21,550,139. This is nearly double the exports of the previous fiscal year, when the number of machines shipped abroad was 11,803, valued at \$12,965,049. This is the greatest export trade in the history of the American motor car industry and is a splendid tribute to the worth of American cars and the enterprise of the makers in opening up markets for their product abroad. Not only did the exports of cars reach the high water mark but the exports of parts, except tires, likewise increased tremendously, rising in value from \$2,544,180 during the fiscal year 1911 to \$4,107,155 during the fiscal year 1912.

During June last the number of cars shipped abroad was 1,941, valued at \$2,116,174, together with parts, except tires, to the value of \$361,835, as compared with 1,554 cars, valued at \$1,702,872, and parts valued at \$324,886, exported during June a year ago.

The detailed shipments of cars for the several periods under consideration were as follows:

June		
Exported to—	No.	Value
United Kingdom.....	327	\$ 222,961
France .....	67	49,905
Germany .....	27	35,787
Italy .....	42	35,185
Other Europe.....	161	161,123
Canada .....	755	1,026,567
Mexico .....	7	8,470
West Indies and Bermuda...	30	31,822
South America.....	167	174,145
British Oceania.....	146	143,376
Asia and other Oceania.....	136	158,478
Other countries.....	76	68,355

—12 Months—		
Exported to—	No.	Value
United Kingdom.....	5,716	\$4,454,448
France .....	574	469,721
Germany .....	288	226,227
Italy .....	211	193,037
Other Europe.....	1,223	1,031,434
Canada .....	6,288	7,560,655
Mexico .....	273	418,599
West Indies and Bermuda...	329	350,440
South America.....	1,611	1,911,066
British Oceania.....	3,625	3,280,988
Asia and other Oceania.....	1,137	1,197,155
Other countries.....	482	456,369

The import tables show that during the fiscal year just ended 963 cars, valued at \$2,134,181, were imported, together with parts, except tires, valued at \$304,144. During the corresponding fiscal year the car imports amounted to 888 machines, valued at \$1,898,843, with parts imports valued at \$351,916. The imports for the month of June last were forty-two cars, valued at \$100,927, with parts valued at \$20,408, while in June a year ago the car imports amounted to 117 machines, valued at \$256,514, with parts valued at \$15,748.

Imports of cars for the two periods under consideration, were as follows:

June			June		
Imported from—	No.	Value	1912	1912	Value
United Kingdom.....	12	\$31,820	7		\$17,105
France .....	29	69,424	21		50,106
Germany .....	41	81,513	3		8,806
Italy .....	14	21,385	5		10,425
Other countries.....	21	52,372	6		14,485

## Foreign Business Double That of Corresponding Month Last Year

Imported from—	No.	Value	No.	Value
United Kingdom.....	128	\$297,382	188	\$434,611
France .....	377	797,931	401	964,635
Germany .....	137	297,153	116	259,313
Italy .....	130	239,079	131	199,555
Other countries.....	116	267,298	127	276,067

Exports of motor car tires during the fiscal year ended June 30, 1912, amounted in value to \$2,657,809, as against \$2,085,107 worth exported during the previous fiscal year. The exports for the month of June increased in value from \$246,625 in 1911 to \$321,889 in 1912.

The total imports of india rubber during the fiscal year just ended amounted to 110,210,173 pounds, valued at \$93,013,255, as against 72,046,260 pounds, valued at \$76,244,603, imported during the fiscal year 1911.

The imports for June last amounted to



August 8—Minneapolis-Winnipeg tour.  
August 8-9—Banta trophy team match, Chicago Motor Club.  
\*August 8-10—Galveston beach meet; Galveston, Tex.  
August 10—Hill climb; Whittier, Cal.  
\*August 30-31—Elgin road races; Chicago Automobile Club; Elgin, Ill.  
\*September—Commercial vehicle run; Chicago Motor Club.  
September 2—Track meet at Winnipig, Canada.  
September 3-6—Chicago Motor Club's truck demonstration.  
September 17—Grand Prix; Milwaukee, Wis.  
\*September 20—Wisconsin challenge and Pabst Trophy races; Milwaukee, Wis.  
\*September 21—Vanderbilt road race; Milwaukee, Wis.  
September 17-20—Fire engineers' convention; International Association Fire Engineers, Denver, Colo.  
September—Track meet; Universal Exposition Co., St. Louis, Mo.  
\*October 7-11—Chicago Motor Club reliability run, Chicago.  
October 12—Track meet; Rockingham park, Salem, N. H.  
November 6—Track meet; Shreveport Automobile Club, Shreveport, La.

\*Sanctioned by A. A. A.

### SHOWS

September 23-Oct. 3—Rubber show, Grand Central palace, New York.  
September 26-Oct. 6—Exposition agricultural motor cars, Bourges, France.  
November 8-16—Olympic show; overflow November 22-30 Agricultural Hall.  
December 7-22—Paris salon.  
January 4-11, 1913—Cleveland show.  
January 11-18—New York pleasure car show; Automobile Board of Trade; Madison Square Garden and Grand Central Palace.  
January 11-22—Brussels, Belgium show, Centenary Palace.  
January 20-25—New York truck show; Automobile Board of Trade; Grand Central Palace and Madison Square Garden.  
January 20-25—Philadelphia show.  
January 27-Feb. 1—Detroit show.  
February 1-8—Chicago show.  
February 10-15—Minneapolis show.  
February 17-22—Kansas City show.  
March 3-8—Pittsburgh show.  
March 8-15—Boston show.  
March 17-22—Buffalo show.  
March 19-23—Boston truck show.  
March 24-29—Indianapolis show.

6,815,153 pounds, valued at \$5,442,859, while in June a year ago the imports amounted to 6,322,768 pounds, valued at \$5,508,081.

The fact that the motor car makers of the United States are annually making great strides in their invasion of the foreign markets, is brought out forcibly in a monograph entitled "Foreign Markets for Motor Vehicles" just issued by the federal bureau of manufactures. This publication is a compilation of reports from American consuls stationed in every part of the globe, and is arranged with the particular end in view of aiding American manufacturers to extend their foreign sales. It describes the peculiarities of the various markets, special local conditions and prejudices to be considered, foreign competition to be met and the best methods of selling cars.

Canada is the United States' best market, the majority of the cars in use in the territory of our northern neighbor being either made entirely in the United States or made by Canadian branches or affiliations of American firms. The highroad clearance, flexibility and moderate price of the American car are steadily winning it favor in regions where highway conditions are similar to those in the United States. The market in Australia and New Zealand is already being well cultivated by American exporters, while Argentine, Brazil and Uruguay in South America, and British South Africa are named as promising fields for future sales. It is estimated also that there are more American than European cars in use in Mexico.

In the far east, Ceylon, India, Japan, Siam, and the Straits settlements are the most likely markets. China has little use for motor cars, as most of the roads of that country do not permit their use. The reputation of American-made cars in India suffered some years ago because some inferior cars were sent among the earlier shipments to that country, but the cars brought from the United States recently have been of such high grade as to dispel this prejudice. In the Straits settlements the principal buyers are wealthy Chinese, who demand comfort and luxury in their cars rather than high power. As a result, low-hung, smooth running cars are the most popular, and the local trade often demands that each car be fitted in accordance with the individual taste of the owner. Right-hand drive is essential there, as in the orient all traffic turns to the left, instead of to the right, as in the United States.

The United Kingdom has been and continues to be an excellent market for American cars, ranking next to Canada in purchases from the United States, but the sales in continental Europe have thus far not been extensive.

# Work Started on Vanderbilt Cup Course

MILWAUKEE, Wis., Aug. 6—Workmen are busy on the 8.2 miles of road comprising the Vanderbilt cup course, and fourteen new culverts of the most advanced type already have been completed and the approaches graded. Two bridges are now under construction and should be completed by August 10. The roads are all of macadam and have been down for more than 15 years, so there is no danger from settling as with new macadam. The surface is being scarified and a layer of 4 inches of No. 2 rock is being added. Two inches of fine screenings will complete the surface, which after being treated with a 70 per cent asphaltum preparation as a binder, will be rolled to granite-like surface and later oiled and sanded several times. Contractor Michael Schmidt says the roads will be ready for preliminary practice on September 1 at the very latest. No cuts and but a few fills are necessary.

The 2.5 miles of concrete road which will comprise part of the course will be ready at the same time as the rest of the work. The concrete work is in the hands of the county, while the remainder is being done at the expense of the township of Wauwatosa. The announcement of the selection of the new course was not made until the county board had delivered a bond insuring the completion of the concrete roadwork by August 31. R. H. McGucken & Co., contractors of Milwaukee, are in charge of this part of the work, the supervision being in the hands of H. J. Kuelling, county highway commissioner.

It has been decided to place the start and finish line in the center of the Burleigh street straightaway, which comprises the lower leg of the course. It is also fixed that the racing cars will run clockwise, instead of counter-clockwise, as on tracks and speedways. The location of the grandstands on Burleigh straightaway will rob those in the choice start and finish seats of the excitement and high speed which will be made on the two 3-mile straightaways, the north and south Fond du Lac roads, but it will give the crowds lined along the unreserved part of the course something better than usual. They will be able to see the cars sweep up or down a 3-mile stretch on each side of the course, and it is there that the highest speed and spectacular work will be in view.

Three trunk street car lines make access to the grandstands and reserved parking spaces easy. Bleachers will flank the grandstands and a set of uncovered stands will be located just before the city limits turn at the southeast corner. The grandstands are on the south side of the course, facing away from the sun. Two huge scoreboards will be set opposite the stands, on each side of the official and press towers. There will be eight scoreboards in all,

## Milwaukee Loses No Time in Preparing for Road Carnival

operated by electricity in one circuit, giving every spectator on the course the standings at the same time as they are flashed to the main grandstands.

Provision has been made for six hospitals and signal stations, distributed over the course at points of vantage. The entire frontage, inside and outside, of the north and south Fond du Lac and Town Line roads, three legs of the course, is unreserved parking space, divided into fifty divisions.

The main grandstand will consist of two sections, to the left and right of the start and finish line. Each half will contain twenty-four sections of nineteen tiers each. There are fourteen seats in each tier. In front of the seat sections there will be a promenade, then two sections of boxes in two tiers, each containing fifty boxes, making a total of 200 boxes with six seats each. Forty boxes nearest the start and finish have been priced at \$40 each and the remainder at \$30. Ten grandstand sections in the center, five on each side of the line, have been priced at \$1.50 the seat and the remainder at \$1. Reserved parking spaces opposite the grandstand, each accommodating 100 cars and so limited, will be charged for at the rate of \$30 for the space. Other parking space around the course will cost \$15 down to \$10 per space, according to advantage of location. In addition to these prices, each person occupying any seat, box, parking space or other location must pay a general admission fee of \$1, the receipt for payment being an identification tag which must be conspicuously displayed on the person.

Access to the stands and parking spaces will be by the roads comprising the course, under the supervision of the clerks of the course and the militia. The roads will be closed at 9:45, 15 minutes before the start of each of the four races on the program. Warning bombs will be fired in series to clear the course, the first at 9:15, two at 9:30, three at 9:45 and four, signifying the start of the race, at 10 sharp. The race program is as follows:

Tuesday, September 17—The race for the Automobile Club of America's gold cup, the American grand prix, at 385.4 miles or forty-seven circuits of the 8.2 mile course.

Friday, September 20—The race for the Pabst Blue Ribbon trophy, the gift of Colonel Gustav Pabst, of Milwaukee, at 205 miles, or twenty-five circuits; and the race for the Wisconsin Challenge trophy, the gift of the Wisconsin Motor Mfg. Co. of Milwaukee, at 164 miles, or twenty circuits.

Saturday, September 21—The eighth annual race for the William K. Vanderbilt, Jr., cup, at 278.8 miles, or 34 circuits.

As entries for all races do not close until midnight, September 14, the M. A. D. A. is making no effort at this time to

classify and publish the list of nominations on hand. There is no doubt that there will be between seventy and eighty cars entered in the four events and the M. A. D. A. is figuring on elimination contests in case the entry list runs much above these figures.

## READY FOR BEACH MEET

Galveston, Tex., Aug. 5—With cars timed to the last word in fitness, some of the most noted drivers of the continent are tonight camped on the beautiful beach course here in readiness for the 3-day meet which begins Thursday.

Held in connection with the annual cotton carnival and under the auspices of the Galveston Automobile Club and the Texas State Automobile Association, this great beach event has served to bring together from all sections of the Lone Star state and also from many points distant, men with wide reputations in the motor world and who have been connected with motor racing since its inception as a sport.

Now that Galveston is connected with the mainland, since the opening of the new causeway, motorists, touring from every part of the state are here by the thousands and every inch of garage space of the city is tonight occupied with many parking their cars in the specially constructed tent garage at the beach. Long lines of small tents are to be seen along the beach comprising motorists who are camping out.

Among the stars on the ground who will compete are Neil Whalen, driving a National; George DeWitt, driving his own specially-designed front-drive Gila Monster; Louis Disbrow, with his Jay-Eye-See; Joe Nikrent, Farmer Bill Endicott, Heine Ulbrecht, and the Studebaker team.

## A. A. A. SUSPENDS SCHACHT

New York, Aug. 3—The bulletin issued today by the contest board of the American Automobile Association announces the suspension of the Schacht Motor Co. of Cincinnati until January 1, 1913, for advertising a stock car performance in the 500-mile race at Indianapolis, where the Schacht finished fifth. The company claims the advertising was done by an agency without its authority and that as soon as the discovery was made that it had been published it stopped the ad.

The contest board also has suspended Joe Dawson and his manager, C. E. Shuart, for competing in an unsanctioned meeting at Memphis, Tenn., said suspension to stand until the two can show reason why it should be lifted. Joe Matson, who was suspended for not appearing at Toledo after he had made an entry, was reinstated, it being held he had been sufficiently punished by being barred from racing at Scranton and Wilkes-Barre.



# Fifth Race Added to the Elgin Program

Hugh B. Andrews of Scranton, Pa., promoter of the meet at Wilkes-Barre, July 20, was debarred and declared ineligible for further sanctions to January 1, 1913, for failure to properly oil the track or remove the top rails of the fences.

The contest board, having been furnished with the original ticker tape, used at Santa Monica and the Los Angeles motordrome, has approved the following records:

## SANTA MONICA ROAD RACE, LOS ANGELES

Car	Driver	Miles	Time
Free-for-all.			
Fiat, Tetzlaff.....		303.012	3:50:57
231-300 class C			
Mercer, DePalma.....		151.506	2:10:43.85
161-230 class C			
Maxwell, Josrimann.....		101.104	1:37:57.90

All these are non-stock records.

Tetzlaff's average, 78.72 miles per hour

## SPEEDWAY RECORDS REGARDLESS OF CLASS

Driver	Car	Place	Date	Miles	Time
Bragg, Fiat, Los Angeles, May 5..		3	1:54.86		
Bragg, Fiat, Los Angeles, May 5..		4	2:33.37		
Bragg, Fiat, Los Angeles, May 5..		5	3:11.75		

## CLASS C SPEEDWAY RECORDS

161 to 230 Inches

Driver	Car	Miles	Time
Tower, Flanders, Special.....		25	21:12.42

Los Angeles, May 5, 1912.

## CLASS C SPEEDWAY RECORDS, 231 to 300 Inches

Driver	Car	Miles	Time
De Palma, Mercer, Los Angeles..		1	00:45.60
De Palma, Mercer, Los Angeles..		2	1:31.53
De Palma, Mercer, Los Angeles..		3	2:17.17
De Palma, Mercer, Los Angeles..		4	3:02.70
De Palma, Mercer, Los Angeles..		5	3:47.34
De Palma, Mercer, Los Angeles..		10	7:27.33
De Palma, Mercer, Los Angeles..		15	11:11.17
De Palma, Mercer, Los Angeles..		20	14:56.05
J. Nikrent, Case, Los Angeles..		25	18:53.20

May 5, 1912

## NINE IN WINNIPEG TOUR

Minneapolis, Minn., Aug. 3—Nine entries were made by August 3 for the fourth annual tour of the Minnesota State Automobile Association August 8-15 to Winnipeg, when the list closed. In the non-contestant class there are two entries which will be increased.

The entries for the touring class are: Marmon, Fawkes Automobile Co., Bohn Fawkes, driver; Mitchell, F. E. Murphy Automobile Co., George Murphy, driver; Paige-Detroit, same, Mat Miles, driver; Warren-Detroit, same, Ross Parker, driver; MacFarlan, John P. Snyder Automobile Co., Paul Carpenter, driver.

Light car class: Hupmobile, R. W. Munzer & Sons Co., C. Munzer, driver; Flanders, Studebaker corporation, winner of Wisconsin tour, W. H. Soules, driver; Cutting, Hudson-Thurber Co., W. H. Lincoln, driver; Cadillac, Zekman Automobile Co., A. Zekman, driver.

Noncontestant, H. J. Clark, Packard; Dr. H. G. Blanchard, Waseca, Minn.

Pilot car, Interstate, Tri-State Automobile Co.; pacemaker, Stoddard-Knight, Northland Motor Car Co.; press, Oldsmobile, Oldsmobile Co. of North America, and Pierce-Arrow, O. A. Brietson Co., Brookings, S. D., members of Luverne, Minn., club.

The start will be made at 8 a. m.,

## Class for Cars 230 and Under Carded by Chicago Promoters

CHICAGO, Aug. 6—A fifth event has been added to the Elgin road racing card which is scheduled for contest on August 30-31, the Chicago Automobile Club and Elgin Automobile Road Race Association having decided to put on a class for cars of 230 cubic inches piston displacement and under at a distance of 96 miles. Permission to do this has been secured from the American Automobile Association and the race will be run the first day in conjunction with the Aurora trophy and the Illinois cup.

It is stipulated that there must be at least two different makes of cars competing, and the prize money consists of \$300 for first place and \$200 for second. There are two entries certain, the Studebaker Corporation having agreed to enter the two cars it is racing at Galveston this week. In addition, W. G. Wordingham, local agent of the Herreshoff, has promised at least one entry, either the racing car he already has or one of the company's new six-cylinder models.

While no new entries have been re-

ceived within the last few days, the promoters have assurances of plenty of support, so there is no worrying over the entries. Another effort has been made to get the Peugeot to enter. E. C. Patterson, of Chicago, agreed to import one of the Peugeots, with Boillot for driver, and now the pot has been sweetened by the agreement of R. J. Collier, of New York, publisher of Collier's Weekly, to stand sponsor for a second Peugeot which he will enter both at Elgin and Milwaukee. David Bruce-Brown is taking a personal interest in this and has cabled his friend Boillot, urging him to make the trip to this country. It is expected a definite reply will be had this week.

Out at Elgin the promoters are about to start work on the course. This is not a hard proposition this year, because the circuit weathered well. Contractors say that the work can be completed within a week or 10 days and that the course will be faster than ever.

Military protection is assured by Governor Deneen, who has written Allen Ray of the Chicago Automobile Club that he will permit of the soldiers being used for this purpose. It is likely the guards will come from the Second, Third and Fourth regiments, negotiations already having been started.

August 8, from the Hotel Saint Paul, St. Paul. Dr. C. E. Dutton, state president, will have charge in the absence of Judge E. W. Bazille, chairman of the tour.

## PROBES HUB'S CAR UPKEEP

Boston, Mass., Aug. 3—Following the discharge of Chief Clerk Casey of the school commission of a charge of joy-riding in using the motor car belonging to the commission, the Boston finance commission has inserted its probe into the care and maintenance of the city motor cars. It was Casey's second offense, and the first time he suffered a reduction in salary of \$500 a year. It is expected that when the report of the finance commission is made public some startling figures will be given out and there may follow some drastic action.

According to the city auditor's books, \$89,473.35 was spent during the past fiscal year on the fifty-four cars and trucks in the service of the city. The figures show that the public works department spent the larger amount, but as it has seventeen cars this is not surprising.

Mayor Fitzgerald, although he has but one car, he has spent \$5,494.09 for its maintenance, or more than the car cost the city new. This is nearly as large as the amount spent for the maintenance of all seven cars by the police department. The mayor has just bought a new car for

\$3,200. The cost of maintenance for the departments follow: Bath department, three cars, \$6,845.07; park department, four cars, \$7,781.67; health department, four cars, \$3,327.04; school department, two cars, \$4,505.48; public works department, central office, one car, \$1,162.31; bridge and ferry division, three cars, one out of use, \$4,755.66; paving division, three cars, \$5,706.29; sanitary division, two cars, \$1,947.87; street cleaning division, two cars, \$3,980.50; sewer division, four cars, \$4,004.24; water division, three cars, \$7,989.17.

That some of the cars are used for evening and Sunday outings is well known. When the matter of joy-riding came up before the council passed an order to have all city cars marked, but this is a joke, for the cars bear little metal plates a few inches square with initials only on the sides near the running boards where they are not noticed.

It is expected that following the finance commission's report there will be established a municipal garage where a check can be kept on all cars. Now they are kept anywhere and the chauffeurs can get them any time they want them and the officials get the cars, too, at any old time, it is said. Often no records are kept of the time they go out and in as required by law, because the bills are paid so promptly and no questions asked, it is said.

# Standards Discussed by Detroit S. A. E.

**Local Chapter Decides National Committee Should Be One to Take Up Matter with Authorities at Washington—Testing Laboratory for Use of Makers Urged**

**D**ETROIT, Mich., Aug. 3—The keynote of the meeting of the Detroit section of the Society of Automobile Engineers held on August 1, was the discussion of the proposed standards work to be done for the motor industry by the bureau of standards at Washington. It was the general sentiment of the members of the section present that any negotiations which are to be carried on with the bureau should be done by the national council of the society, since the communications of this body would carry more prestige than would those of any local branch of the society.

## Referred to National Body

A motion made by H. W. Alden, discharging the Detroit committee which was appointed to confer with the officials of the bureau of standards and recommending that the work be carried on by a committee appointed by the national council of the society, was carried. It was also recommended that J. O. Heinze and E. J. Stoddard, who have been active in the work on behalf of the Detroit section, be placed on this national committee.

In discussing the matter of seeking government co-operation in arriving at certain motor car standards, Mr. Stoddard brought out that the matter should be very cautiously handled, and that the society should wait for all developments. In the committee's communications from the bureau, Professor Stratton, its head, suggested unofficially that the society send to Washington a representative who would be given the bureau's facilities for any desired line of research. He also suggested that the society compile a list of the things which it desires to know and what figures it wishes to obtain, so that there would be a working basis. Mr. Stoddard proposed a committee of the society to compile such data. There would then be a group of practical men interested at this end and theoretical men at Washington, and thus the two bodies would work together advantageously. The bureau apparently is very enthusiastic over the matter in Mr. Stoddard's opinion.

Mr. Heinze also advocated that the negotiations be carried on through the national body of the society. He thinks that the Detroit section has not been specific as to what it really wants to know, and thinks that the data desired should be formulated, as it will be impossible to get co-operation from the bureau unless the line of investigation is clearly known. He questions that the bureau has the apparatus to conduct tests on every point which the society desires. Like Mr. Stoddard,

he thinks that unless the matter is conducted nationally by the society, it will not be gone at in the right way, as it will carry more prestige if nationally carried on.

G. W. Dunham and J. G. Perrin held practically the same opinions on the subject, while F. H. Floyd, when asked to give his views, stated that since he was not familiar with the steps that have been taken in the work, he could only discuss it from the standpoint of fuel standardization. At the present time we do not exactly know what a motor fuel is. The trade is calling naphtha gasoline, while half the time we are neither using gasoline nor naphtha, but a fuel of still different gravity. It is an open question as to whether the fuel can be standardized, and to avoid any confusion if such were done, it might be styled motor fuel.

Mr. Dunham very correctly stated that the society should not have to hunt for things to standardize, but if it found that there are really some things which should be standardized, then all such should be listed and submitted to the bureau through Coker Clarkson, general manager of the society.

## Views of D. F. Graham

D. F. Graham stated that one thing which could be standardized to immense advantage and on which there is a wide difference of opinion is the exact size of gauges and plugs for accurate measurements. There is a difference in the manner of use of micrometers, which often results in varying ideas of the same accurate dimension. It is hard to tell just what the size of a hole or the diameter of a piece is. Standards for such measurements should all agree, and since each manufacturer cannot afford to carry such a set due to its expense, one set should be kept for the use of all.

In further discussing the subject, Mr. Heinze made the society's position clear by stating that it should ask the bureau of standards to tell it only the things which it cannot find out for itself, due to the lack of apparatus for such research, or to lack of time to carry on such exhaustive tests as such information would necessitate. The bureau is maintained for the purpose of laying down fundamentals of measurement, and not to pass upon the relative merits of any pieces of apparatus, such as magnetos, carbureters, and so on. For example, two fuels may have different heat values with the same specific gravity. If we could say that a fuel is to have a given heating value with a given specific gravity, then we would have arrived at a standard for that fuel. So with three

kinds of steel,—crucible, open-hearth and electric. They have exactly the same analysis, yet their properties are different. It is for the purpose of pointing out the best of the three, for example, that the bureau exists. It is very important for the society to make it clear just what standardization it wants, he reiterated.

## Proposed Testing Laboratory

In speaking of the proposed testing laboratory in Detroit, for the joint use of all car manufacturers, as proposed at the summer meeting of the entire society, Mr. Heinze stated that while some of the privately owned laboratories now existing are good, none of them is complete. If there were one which had some eminent professor in charge who was unbiased by commercial considerations, and who had all the time he needed to do his work, such a laboratory would be of great benefit. The expense of such an institution would be much less than the total cost of operating individual laboratories. The project would cost about \$100,000 if carried out as it should be, and Mr. Heinze stated that unless it could be done in the right way, it would had better be left alone.

A committee was appointed to draw up a set of by-laws for the Detroit section, which up to this time has operated without them. This committee is composed of H. W. Alden, chairman; E. T. Birdsall; D. F. Graham; Milton Tibbetts and A. A. Greenburg.

The talk which was to have been given by Mr. Parkinson of the Esterline company on the Golden Glow light, was postponed until a later date, due to the lateness of the hour when the other business was completed.

## ROAD CONGRESS OUTLINES PROGRAM

New York, Aug. 5—Scientific management as applied to the nation-wide problem of building and supervising public roads is to be the keynote of the American Road Congress to be held in Atlantic City, September 30 to October 5. The purpose of the congress, which marks the consolidation of the convention interests of the American Association for Highway Improvement, the American Automobile Association and the National Association of Machinery and Material Manufacturers, is to deal with every phase of the road subject in an orderly and scientific manner.

At this congress civil service will be thoroughly considered in its application to road management. General John C. Black, chairman of the United States civil service commission, will make one of the addresses on this subject. He will explain the importance of putting the civil service, or merit test, to every man having anything to do with the supervision of the roads.

Every other phase of the road subject will be handled in the same scientific man-



# Car Makers Convene at Christmas Cove

ner. Bankers will discuss methods for safeguarding a proper accounting of taxes and assuring business methods in obtaining loans or making bond issues to build good roads. There is to be a legislative section which will endeavor to point the way to needed reforms in road legislation. The president of the American Bar Association is lending his assistance to preparation of the program for this particular section of the congress.

In conjunction with the congress, there will be a conference of educators with a view to having highway engineering introduced in colleges on a scale that will meet modern requirements. Engineers experienced in road building are not plentiful and if the colleges could be induced to introduce the right kind of courses one of the greatest needs of the road movement would be supplied.

## BRITISH COLUMBIA MILEAGE

Vancouver, B. C., Aug. 3.—The following statistical information showing the mileage in the different sections of British Columbia, and the comparison of the increase from 1902-3 to 1910-1911, the last available figures, are given in a booklet recently issued by the Canadian Highway Association:

	1902-3	1910-11
Alberni .....	338	437
Chilliwac .....	391	105
Cariboo .....	1,510	1,933
Columbia .....	890	944
Atlin .....	391	393
Comox .....	200	273
Cowichan .....	200	200
Cranbrook .....	664	689
Delta .....	99	290
Dewdney .....	143	190
Esquimalt .....	152	246
Fernie .....	334	457
Greenwood .....	112	190
Grand Forks .....	234	255
The Islands .....	96	153
Kamloops .....	727	1,000
Lillooet .....	1,052	540
Nanaimo .....	35	45
Newcastle .....	200	200
Okanagan .....	373	1,720
Richmond .....	178	150
Revelstoke .....	474	478
Similkameen .....	472	1,042
Skeena .....	169	1,040
	10,503	15,406

## NEW ROAD FOR GEORGIA

Savannah, Ga., August 3.—Plans are now being prepared for the preliminary survey of the line of the proposed motor road from Savannah to Tybee island, Georgia's great seaside resort, and engineers are now at work selecting the route. Work will begin as quickly as possible after the preliminary survey has been accomplished. The road will be equipped with toll gates. A company has been organized to finance the project. A number of large subscriptions to the stock already have been made.

A roadbed of at least 24 feet from the city to the ocean is the plan of those who have the project in hand. Considerable work has already been done in securing the right of way to the island. Several tentative routes are under con-

## S. A. Miles Acts as Host at Midsummer Meeting of N. A. A. M.—Railroad Rates and Insurance Occupy Most of Time at Business Session—Committees Will Investigate

NEW YORK, Aug. 5.—One of the most pleasant gatherings of the National Association of Automobile Manufacturers was held last week at Christmas Cove, Me., when the regular July and August sessions of the association were combined and conducted at the summer home of Samuel E. Miles, general manager of the association.

The business session, which was held on Monday, occupied about 4 hours and was largely devoted to the consideration of routine matters. One of the interesting matters that was discussed was the recently announced advance in freight rates on motor cars consigned to the Pacific coast. The former rates are \$3 per 100 pounds in earload lots from Ohio, Michigan and Atlantic seaboard common points to Pacific coast common points. The new rates differentiate between New York and New England common points; Buffalo common points and Detroit common points and raise the rates respectively to \$3.30, \$3.20 and \$3.10 per 100 pounds.

As the general practice is to ship two large cars or three medium sized cars in a car, the raise would mean an advance in cost of shipment on motor cars from New York and New England of about \$15 per vehicle; \$10 per vehicle from Buffalo and common points and \$5 per vehicle from Detroit and its common points.

sideration. No barriers have yet been encountered by the promoters. Indeed, it seems to be the general policy of property owners to help in the undertaking.

Evidence that the promoters of the turnpike movement are in earnest is furnished by the fact that a charter of incorporation for the Savannah and Tybee Turnpike Co. has been filed in the superior court. Those who stand sponsor for the company are D. C. Talbott, John E. Schwarz, Claude M. Stubbs and John Bell, all of Savannah, and Hugh W. Fry, of Roanoke, Va.

The petition asks that the charter cover a period of 20 years, and that the capitalization of the company be listed at \$500,000, with the privilege of increasing it to \$1,000,000 later. Permission is asked of the court to construct and maintain a toll road between the city of Savannah and Greater Tybee Island, together with such toll gates, trestles and bridges as may be necessary, including drawbridges at such streams as this form of structure may be required. The petition also asks that the company be empowered to enter into

Just what will be done about the matter is still problematical, but the case has been referred to James S. Marvin, traffic manager of the association.

Another pertinent subject discussed was the problem of insurance. Arguments were made that the rates charged for the various kinds of insurance were so high that many car owners were not taking out policies. This resulted in limiting the business of the insurance companies and the tendency was to cause owners of cars who were most liable to accident and mishap and who could not afford to do without insurance, to furnish a considerable part of the total business. Under these circumstances it was quite likely that the ratio of losses paid would be larger than they would if the business was on a more reasonable basis and consequently broad and general.

No action was taken officially by the association but the matter was referred to a committee for investigation and report.

Most of those who attended the meeting arrived at Portland on Saturday morning and were taken to Christmas Cove via motor cars. Sunday was spent in recreation as was most of Monday and all day Tuesday. Many of the visitors stayed over Wednesday and a few were still left to enjoy the hospitality of Mr. and Mrs. Miles at the end of the week.

contracts for construction, to buy material and to do such other things as may be necessary to insure the success of the venture.

Tybee island is 18 miles distant from Savannah. It is connected with the city only by a one-track branch road of the Central of Georgia Railway, and by water, of course. There is no dirt road to the island. The government reservation of Fort Screven is located on the island. It has long been contended that the government ought to build a military turnpike to Tybee in order to insure a line of retreat in case a shell from the enemy's ship should interrupt traffic over the railroad.

## F. BRISCOE OUT OF U. S. M. CO.

New York, Aug. 5.—Frank Briscoe, one of the vice-presidents of the United States Motor Co., who has had charge of the designing department, has resigned. He will sail for Europe late in August to make a study of European motor car engineering. He probably will remain abroad for a year. While resigning his office in the United States Motor Co., Mr. Briscoe will continue as president of the Briscoe Mfg. Co.

# Weak Rules Govern Belgian Grand Prix

Team Contest Results Unsatisfactorily, Becoming Somewhat Farcical Because Contestants Take Advantage of Loophole in Methods of Timing the Cars



HERMES CROSSING BRIDGE AT ANSERME IN BELGIAN GRAND PRIX

ANSEREMME, BELGIUM, July 21—Belgium ran its grand prix race under experimental rules, and found them unsatisfactory. Instead of the usual practice of declaring the fastest car the winner, it admitted in its race teams of three and imposed a minimum average per round, according to cylinder area. The team most nearly adhering to this average was to be declared the winner. It admitted cars varying in cylinder area from 2 to 4½ liters, the average speed for a 3-liter car, for instance, being fixed at 40 miles an hour. This average had to be maintained on individual rounds; loss of time on one round could not be made up by speeding on another one. The manufacturers themselves had decided on the averages. They were of the opinion that it would be very difficult for any set of cars to maintain them, in view of the hilly and winding nature of the course.

## Boillot Fools Officials

The Peugeot company entered a set of 3-liter cars prepared for the French grand prix, and Boillot, who acted as race manager for his drivers Goux, Zuccarelli and Thomas, got a verbal agreement from the committee that in case of dead heat the cars most closely adhering to the average would be given the advantage. It was an easy matter for these lightweight racing Peugeots to cover the 30-mile course at a speed of 40 miles an hour. Boillot, taking advantage of the defect

in the rules, stationed himself 300 yards from the timers' box and as his cars came round stopped them and gave them the start so that they could run over the line within a few seconds of their official time for finishing at the average speed imposed. So well was it done that the differences between the fastest and the slowest of the twelve rounds was not more than 5 seconds for any one of the three cars. But four other teams—Mercedes, Opel, Minerva, and Hermes—finished without the loss of points, though not with the same absolute and artificial regularity, and when Boillot claimed the advantage he was informed that all five sets of cars were considered equal.

There was a wordy battle, in which the jury remained firmly to its decision that the second day's run of 360 miles should be started with the five teams classed equally. Dissatisfied at the decision, the Lion-Peugeot men were given the order to go all out on the second day, while the Minerva managers, who had objected to the artificial timing of the Peugeot men, openly adopted their tactics. The crowd got on the course during the initial round and to avoid disaster, Goux had to brake furiously. The effort caused injury to his universal joint, necessitating a roadside repair, which made it impossible for his Lion-Peugeot to finish the initial road in the limit imposed. He had no further trouble, and ran throughout at an average

of 50, but his point penalization was ineffaceable. Later Zuccarelli had trouble with his overhead timing gear, which caused his elimination. This left Thomas as the only clean-score man of the team and officially put the Frenchmen out of business.

Minerva, which ran with the Knight motor of 3.1 by 4.8 inches bore and stroke, finished the 720 miles at the imposed average of 38 miles an hour, thus securing the maximum number of points for its team of three. Hermes, a Belgian firm with a four-cylinder model of 2.8 by 4.7 inches bore and stroke, also maintained its average—35 miles an hour—throughout the distance, being classed equally with Minerva. The jury decided to share all the prizes between these two.

## Work of the Cars

Mercedes, running the biggest car in the race, a Knight four-cylinder of 3.9 by 5.5 inches bore and stroke, lost a point through one of its cars being late as the result of a slipping clutch; its general running speed was far above the average imposed. Opel, with a four-cylinder of 2.7 by 5.1 inches bore and stroke, lost 6 points through failure to keep up the average. Schneider, starting with only two cars, lost one of them towards the end of the race with a broken steering gear. Sava, F.A.B., and Miesse withdrew all their cars. Germain put in a valveless car, but rear axle trouble caused its withdrawal. America was represented by a Ford, an absolutely stripped chassis driven by a local agent, which steered wildly on the road and ran into a tree towards the end of the first day. The following are the official particulars of the cars, and speeds imposed:

Car.	Bore and Stroke.	Cyl. Area Cubic Inches.	Speed Imposed M.P.H.
*Minerva	3.1 x 4.8	183	40
Hermes	2.8 x 4.7	122	35
*Mercedes	3.9 x 5.5	274.5	44.4
Opel	2.7 x 5.1	128	35.3
Lion-Peugeot	3 x 6.1	183	40
Schneider	3.2 x 5.5	183	40
Germain valveless	3.6 x 5.9	244	43
Sava	3.2 x 5.5	183	40
F.A.B.	2.9 x 4.7	134.2	35.5
Miesse	3.5 x 5.5	219.5	42
Ford	3.7 x 4	177	39.9
*Knight motor.			

Continental fitted the winning Minerva team with tires. Just before the start of this race Michelin made the official announcement that he would take no further part in motor car racing.

## FINAL DECREE FAVORS WEED

New York, Aug. 5—Final decrees in the suits for infringement of the Parsons non-skid patent have been entered in the United States district court against the Newhall company and the Seneca Chain Co. on application of the Weed Chain Tire Grip Co. The last step in these prosecutions was not contested and the decrees were by consent of the defendants.



# National Reliability Starts October 7

**D**ETROIT, Mich., Aug. 6—Detroit being the start of the national endurance run of 1912, naturally this is the news center. Here are being received reports from the pathfinders who went out in a Flanders electric last Wednesday, while other news concerning the tour emanates from here.

It has been decided that the tour will start October 7 and that it will finish in New Orleans about 10 days later, with the Sunday stop in Memphis. Entry blanks now are out and specify that the Glidden trophy is offered for the team competition, the Anderson trophy for the runabout contenders, while the touring cars will compete for a new trophy to be hung up by the American Automobile Association.

The first three entries for the tour come from the Everett people, who have been given numbers 1, 2 and 3.

Reports from the pathfinders are interesting. A telegram from Indianapolis states that the scouts reached there Saturday noon. Sixty-five miles that day completed a total mileage of 346.5 by the speedometer for just 3 days of traveling. The actual tour distance as entered on the log book is 312.5 miles.

The route was altered from the schedule roads Saturday and the pathfinder came from Muncie to Indianapolis via Yorktown, Daleville, Chesterfield, Anderson, Pendleton, Clarksville, and Noblesville.

A telegram from Louisville Monday night stated that the pathfinders reached Louisville late that evening, having made a record run for 1 day over country roads in their Flanders electric coupe. The distance traveled was 138 miles officially, but 145 miles was made owing to the party becoming lost in the darkness.

The hills were very steep, including one 3 miles in length and with grades of 15 to 20 per cent and with forty-three turns.

Many miles of the road were extremely sandy. No incident other than becoming lost occurred to mar a perfect day's run, the weather being altogether favorable. The recent four-states tour, returning to Indianapolis took 2 days to make this run.

## PRIZES AWARDED RANCHMEN

Dallas, Tex., Aug. 3—The prizes for the Farm and Ranch tour of Texas were awarded this week. The fifteen successful contestants in the race drew lots for the \$300 loving cup. It was won by W. H. Camp, a ranchman of San Gabriel, Texas.

Of the twenty-six cars entered in the contest, fourteen in the touring class and one in the roadster class finished with a clean score, no penalties having been assessed against them.

**Run Expected to Last 10 Days—Everitt First to Enter A. A. Contest with Three Cars—Flanders Electric Making Satisfactory Progress Blazing Trail to New Orleans**



PITS AND GRAND STANDS IN BELGIAN GRAND PRIX—MINERVA PASSING

The following announcement of the prizes was made by Colonel F. P. Holland this week:

The first and second cash prizes amounting to \$850 for the second prize in the roadster class for which there was no contestant, or a total of \$900, were divided equally among the fourteen contestants coming in with clean scores and the driver of each car receives \$64.27 in cash. The name, the postoffices of each contestant and the name of the car driven is as follows: W. R. Bishop, Carrollton, Texas, Franklin. J. M. Howe, Forney, Texas, E. M. F. W. R. Mickle, Plano, Texas, Chalmers. J. R. Pennington, Whitewright, Texas, Buick. R. B. Dunn, Bryan, Mitchell. B. W. Bean, Howe, Texas, Studebaker. D. W. Rutherford, Waxahachie, Texas, Maxwell. O. L. Sims, Paint Rock, Texas, Overland. J. Mantel, Dallas, Texas, Hudson. H. V. Kendrick, Moody, Texas, Buick. S. J. Hall, Malakoff, Texas, Hupmobile. W. H. Camp, San Gabriel, Texas, Reo. W. R. Newton, Hillsboro, Texas, Ford. R. G. Roach, Dallas, Texas, Ford.

The first prize of \$100 cash was won by L. B. Blair, of Alvarado, Texas, in a Maxwell car.

The following individual prizes were awarded:

One Disco self-starter, given by the Hudson company for the oldest man who finished first and acted as driver all the way—J. R. Pennington, of Whitewright.

One silver loving cup, given by C. H. Ver-

schyle of Dallas, to the owner of the car coming the longest distance to enter the tour—O. L. Sims, Paint Rock.

One set of Kelly-Racine tires by the Mitchell company to the Mitchell car making the best score—R. B. Dunn, of Bryan.

One silver loving cup by the United Motor Co. to the Maxwell for making the best score—D. W. Rutherford, Waxahachie.

One set of plain casings, one set of inner tubes, one set of Moore tire-saving jacks by the Case company, to the Case car coming in first, the longest distance to enter the race, and the Case car having the least number of penalties—All won by W. H. Anderson, of Kerens, Texas.

One silver loving cup by the Buick company to the Buick car making the best score—J. R. Pennington, Whitewright, Tex.

One silver loving cup by the Ford company for the best score made by a Ford car—R. G. Roach, Dallas, Tex.

One silver loving cup by the Hall company for the Chalmers car making the best score—W. R. Mickle, Plano, Tex.

One set of tires by R. G. Langley to the Franklin car making the best score—W. R. Bishop, Carrollton, Tex.

Besides the winners in the tour, the following were contestants: W. C. Kingsley, Garland, Cadillac; B. H. Matthews, Mart, Oakland; B. N. Colwick, Norse, Mitchell; V. Coleman, Kerens, Overland; V. F. Wilkerson, Ferris, Oakland; H. L. Perkins, Ennis, Buick; W. A. Hamilton, Dallas, Hupmobile; M. C. Christian, Elm Mott, Brush; W. F. Fanning, Iowa Park, Ford; L. I. Wilmas, Irving, Buick.

Four cars had time penalties. They were: W. H. Anderson, Kerens, Case; W. C. Kingsley, Garland, Cadillac; B. F. Wilkerson, Ferris, Oakland; H. L. Perkins, Ellis, Buick.

Several interesting events took place. Several of the cars were wired with baling wire. One car came in on three wheels.

# Pacific Highway Association Meets

**S**AN FRANCISCO, CAL., Aug. 6—Special telegram—With more than 100 good road enthusiasts present from all parts of the Pacific coast from Alaska to Mexico, the third annual convention of the Pacific Highway Association is in session in this city. Boosting good roads is the battle cry of the delegates and much enthusiasm among the local and state authorities is being aroused by the session.

The concrete aim of the convention is to bring into reality the plan for a continuous highway along the coast from Canada to the City of Mexico. The delegates were welcomed by Lieutenant-Governor Wallace. John Brisben Walker, head of the California Automobile Association, spoke of the close interest of the Panama-Pacific exposition in the good road movement. Walker went deeply into the subject of road building, and declared that good roads eventually would solve the problem of high freight rates and with the use of motor trucks would offer the cheapest means of transportation between cities. He also declared that ideal roads would bring the cost of motor maintenance down to about one-tenth of what it is now.

A. B. Fletcher told of the work of the state highway commission during the past year. He said that his commission now has thirty-one survey parties in the field, and has, altogether, 260 people in its employ. He concluded his talk by saying that every effort is being made to finish the system before the exposition in 1915.

The annual report of President Ronald reviewed the work of the association for the past 3 years and urged the members to continue their work for a great Pacific coast highway. He explained that Pacific highway signs now have been posted along the route from the British Columbia line to Redding, in this state, and expressed the hope that funds would be forthcoming to continue the good work down to San Diego.

Monday evening the program was given over to two lectures, each being a first hand account of hazardous pathfinding trips taken by daring motorists who blazed the trail at each end of the proposed Pacific highway. The first was a talk by Chester Lawrence and T. J. Beaudet, who made the trip over the wild and nearly uncharted country between Los Angeles and Mexico City. The gold medal offered by the Pacific Highway Association for this feat was turned over to Lawrence by President Ronald, but the recipient promptly transferred the trophy to Beaudet, who drove the car on the trip.

The second talk was made by P. E. Sands, who drove a pathfinding car from Seattle to Hazelton, in British Columbia, near the Alaska line.

Absence of personal jealousy and keen appreciation of the benefits from cooperation in furthering a public project were

## Annual Session in San Francisco, Cal., Develops Great Enthusiasm

pointed out today by Thomas Taylor, minister of public works in British Columbia, as the causes of the success of highways of the northwest. British Columbia, according to Taylor, is a network of good roads, one province alone having 20,000 miles of highways, and 2,000 miles more are being added annually. He declared that no province received assistance from the government until it was known that the highways of that province were to conform with the general plan outlined for by other provinces.

This afternoon the resolution committee, among other resolutions, offered the suggestion that an executive officer be installed to patrol the Pacific highway and make an annual report to the convention of his findings.

On tomorrow, the last day of the convention, Thomas Taylor will again address the convention, as will Robert N. Lynch, of the California development board. In the afternoon the delegation will be the guests of San Mateo at a huge Spanish barbecue.

## PLAN PITTSBURGH-PHILADELPHIA

Pittsburgh, Pa., Aug. 3—State Highway Commissioner Edward M. Bigelow and his engineers have completed plans for the improvement of the state highway between this city and Philadelphia. It is believed the work of the great pike will be completed by August of next year. According to Bigelow, the highway will be the equal of any in the country, with scenery that is unsurpassed by any in the United States. Much of the work is now under way, only a few days ago the contract for the work in Fulton county having been placed. This includes the work of crossing the Allegheny mountains, something like 14 miles from the west to the east foot.

The rest of the contracts will soon be let. The road will follow the old pike in its entirety. The job of following the old road is a gigantic and expensive one. There is one 7-mile stretch of sand deposit, where macadam will not do. This will be covered with asphalt or amasite.

The plan calls for a great park at the summit of the mountains between Somerset and Bedford counties. This will be known as Grandview. A turntable for cars will be made and timber cut so that an unobstructed view for 25 miles through the valleys can be enjoyed by tourists. The road in this vicinity is identical to that of the Forbes road laid out by General George Washington. Where Grandview park is to be located is the spot called Davie Lewis Lookout, which, according to history, is the place where Davie Lewis,

a highwayman, awaited travelers over the pike to hold them up. It is said that he could see the roadway for 25 miles from this place. Stories of buried treasure in this vicinity are also of such a nature that they will not down.

## REPUBLIC INCREASES STOCK

Youngstown, O., Aug. 3—At the special meeting held on August 1, the stockholders of the Republic Rubber Co. voted an increase of the authorized capital from \$4,000,000 to \$10,000,000. A number of extensions and improvements were discussed and the semi-annual statement was read, showing a large increase in the business of the company. At the directors' meeting following the board declared a special stock dividend of 35 per cent to the common stockholders of record August 1. It is stated also that an offering of preferred stock will be forthcoming in a few months. The regular cash dividend at the rate of 2 per cent per quarter was also declared by the directors.

## CHANGES IN THE N. A. A. M.

New York, Aug. 5—A general meeting of the N. A. A. M. will be called for the near future, probably for the dates of the meeting at which the show allotments are made in October. The Motor Car Mfg. Co. of Indianapolis and the Warren Motor Car Co. of Detroit have been elected to membership. The following changes have been made in representation: H. F. Campbell, Ideal Motor Car Co., to succeed E. C. Sourbier; Gleason Murphy, Rapid Motor Vehicle Co., to succeed J. F. Corl; H. S. Stebbins, Reliance Motor Truck Co., to succeed A. M. Bently. W. C. Teasdale represents the Ideal and Lucius F. Wilson the Warren companies.

St. Louis has been dropped from the local show circuit, the dealers wishing to show in the fall instead of on the dates suggested.

## NEW YORK FIRE DEPARTMENT RULES

New York, Aug. 5—The first revision of the rules of the New York fire department has been made since 1905 and a neat little manual has been issued to govern the department. There is surprisingly little mention of motor fire apparatus, considering that such a large fraction of the fire-fighting machines installed in New York is composed of motor-driven vehicles. Among the rules specifically directed at the motor apparatus are the following:

In section 34 it is ordered that the company commander shall ride alongside the chauffeur. Section 75 provides for special reports as to the effect of inferior gasoline upon motors. Section 112 forbids any member of the department to ride in a motor car not the property of the department.



# Points Out Flaws in the Patent Office

ment and requires all members to prevent any person not a member of the department from riding on a department car.

Several of the rules provide for maintaining and caring for motor apparatus, but there is nothing different in their language than in that applied to the horse-drawn engines.

## TOURING THROUGH UTAH

Salt Lake, Utah, Aug. 5—That 1912 will be a record-breaking year for transcontinental touring is plainly evident by the early rush of tourists to the coast. The vanguard of the continual stream of cars that is now daily passing through this city appeared about a month ago. It reached its highest stage last week, when it is estimated at least 100 cars passed through Utah. The Automobile Club of Utah has opened a free touring bureau at 251 State street in this city, where it furnishes trip maps to these tourists and dispenses free information. A register is kept and fifty tourists took advantage of the opportunity to leave their names and address, where they were going, the make of the car and the average daily travel.

## GROSSMAN PLEA WITHDRAWN

New York, Aug. 5—In the suit of Rose Mfg. Co. against Emil Grossman and others, the plea made by Charles Gill, solicitor for the defendant, has been withdrawn and leave to file an answer on the September rule day has been granted. The suit involves the validity of the Neverout license plate holder patent held by the Rose company. The plea that had been entered by Mr. Gill was that the claims set out in the petition had already been adjudicated. This plea is now withdrawn and an answer to all the material allegations will be filed.

## TRUCK CONCERN IN TROUBLE

New York, Aug. 6—Involuntary bankruptcy proceedings have been instituted in the United States district court against the Wishart-Dayton Automobile Co., which handled trucks in New York. The liabilities are estimated at \$10,000 and the assets at half that amount. Spencer E. Wishart, the well-known race driver, was formerly connected with the embarrassed concern.

## ALCO TRUCK IN WYOMING

Hanna, Wyo., Aug. 5—Road and weather conditions in this section of the country will delay the transcontinental Alco truck here at least 2 days more. With roads submerged under 2 feet of water, and several bridges to the west washed out travel is impossible for touring cars, let alone a motor truck laden with a cargo of freight. Advice here are that repeated rainstorms every day for a week have washed out a mile of railroad track.

## Commissioner Moore Declares Many Inventions Not Entitled to Recognition

WASHINGTON, D. C., Aug. 3—There are no industries in the country more vitally interested in the matters pertaining to the United States patent office than the motor car and accessory industries. To all those connected with these industries it will come as a distinct surprise that Commissioner of Patents E. B. Moore has come out with a statement to the effect that a large percentage of patents issued by the patent office should not be issued at all.

Commissioner Moore made this declaration in discussing the proposed investigation into the methods and personnel of the patent office. The investigation, which is contained in a resolution introduced in congress by Representative Bulkley, of Ohio, and published in Motor Age July 25, is what Commissioner Moore claims he has urged upon congress for 5 years.

Indorsing all the claims made by Representative Bulkley, as outlined in Motor Age at the time, as to the needs of the patent office and the evils which it is alleged exist in the department under his charge, Commissioner Moore said that half a million dollars would remedy every existing abuse and place the office on a modern business footing, under which the government could guarantee the novelty of every patent issued.

Commissioner Moore defended the men who work under him, but he admitted the truth of the statement that no sooner had a man been trained to some position with the patent office than he would move into some business for which his training had fitted him, and which paid him double and often treble the government salary. He declared the difficulty was not in getting good men, but in keeping them. "I would be delighted if congress would conduct the investigation which is proposed in the resolution presented by Representative Bulkley," said Commissioner Moore.

"I would not care to say 50 per cent, but a large percentage of the patents which are issued from this office are not good patents and should not be issued," continued the commissioner. "Yet what can one do under the condition with which we work? We have not the men or the equipment to conduct the searches, and it is only natural that a great deal should be overlooked, which would not be the case if we had the improvements for which I have asked during the past 5 years. If these things are granted to us, it would enable the patent office to make the search so thorough that the government would be able to guarantee at least the novelty of the patent, as is done by

the German government. Then the patentee can be sure that his patent is at least original.

"One must not forget the fact that this office is self-sustaining. It is supported entirely by the inventors of the country. Judging from the receipts which we have taken in in the past 6 months, the surplus for 1912 will be close to \$300,000. This is nearly the amount for which we ask to place the office under modern business conditions. And in the treasury of the United States there is a total of \$7,000,000, which represents the net surpluses earned by the patent office since its beginning. We do not ask congress to give us money, but only to allow us the use of the money which we have earned."

The Bulkley resolution would have the investigation made by President Taft's economy and efficiency commission, which would be required to make a report of its findings before December 10, 1912.

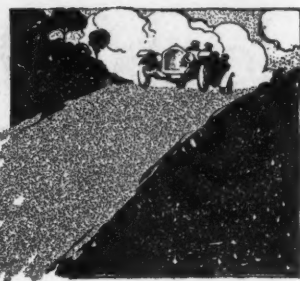
## DULL WEEK IN CRUDE RUBBER

New York, Aug. 6—Crude rubber experienced another dull, draggy week with prices about stationary and both buyers and sellers inactive. Importations aggregated a rather large total, the week-end receipts being 2,800 packages. The buying was placid and was reported to be for jobbing accounts. Reports have been circulated that the Brazilian syndicate has disposed of 650 tons of hard fine Para, about one-third of its holdings, selling in the London market. In the meantime, since July 1 the movement down the Amazon to Para is estimated at 1,600 tons. The big movement to market is probably accountable for the lack of eagerness on the part of buyers and the tremendous manufacturing consumption is said to be the main support under the market. While the bids and offers have been quietly made in practically all the markets, the total volume of trade has been satisfactory. The market has stood for a week around \$1.16½ on a basis of up-river fine.

## PALMER & SINGER OBJECT

New York, Aug. 6—According to Jay N. Emely, solicitor for the Palmer & Singer Mfg. Co., a motion will be made in the United States district court in the immediate future to vacate the order of Judge Hand providing for a decree pro confesso in the suit instituted last fall by the Enterprise Automobile Co. for alleged infringement of the Dyer patents. Mr. Emely asserts that the demurrer filed by him prior to the ruling of the court was not included in the presentation for decree pro confesso by the solicitors for the Enterprise Automobile Co., and the latter hold that the various postponements and delays which have occurred from time to time did not contemplate the filing of any demurrer.

# Routes and Touring Information



## DECATUR, ILL.—BOWLING GREEN, KY.

**D**ECATUR, ILL.—Editor Motor Age—Please advise me the best route from Decatur, Ill., to Bowling Green, Ky., via Indianapolis.—Road Bug.

This should make a very delightful 3 days' trip, covering 173 miles the first day, stopping for the night at Indianapolis, 124 miles the second day, with the night's control Louisville, and a journey of 151 miles the third day.

After leaving the gravel road which stretches out for a distance from Decatur, natural dirt road, which is mostly good, continues to near Terre Haute, where gravel is again found. You should pass through Antioch, La Place, Lovington, Chesterville, Arcola, Oakland and Paris. From Terre Haute to Indianapolis will be found good gravel or stone road all the way via Brazil, Reelsville, Coatsville, Mount Meridian and Plainfield. Half a mile beyond Coatsville watch for right and left turns across an iron bridge, continuing with the trolley poles. Going south from the Hoosier capital you will have good gravel all the way to Louisville, passing through Whiteland, Franklin, Amity, Taylorville, Columbus, Waynesville, Jonesboro, Seymour, Crothersville, Scottsburg, Henryville, Sellersville and New Albany. About 8 miles beyond Scottsburg, after winding through the woods, you should come to a small ford, and a quarter of a mile out from New Albany look out for a sharp right upgrade across the trolley and an immediate turn to the left.

The remainder of your journey will be over the old Louisville and Nashville turnpike, in which great interest has been taken of late and much work done upon the road which will probably be found in pretty good shape, although Motor Age is not in position to say in what condition it will be found. It is a highway as rich in history as in natural beauty. Passing through Mount Washington, Bardstown, New Haven, Buffalo, Canmer, Bear Wallow and Cave City will bring you to Mammoth Cave and Colossal Cavern with their wonders of underground chambers and passages, peculiar geological formations and strange acoustics. Leaving Mammoth Cave over the same road by which you entered the town, a trifle over a quarter of a mile out, cross the railroad and turn immediately to the right. At Glasgow Junction turn to the right, soon



ROAD NEAR POCONO LAKE, PA.

crossing the railroad, then be cautioned for sharp left turn going under the railroad and a couple of miles farther on go through a covered bridge, thence into Bowling Green.

## MACKINAC ISLAND'S NEEDS

Detroit, Mich.—Editor Motor Age—It is one of the inconsistencies of the present day that in modern summer resorts antiquated means of transportation should be the only permissible one. The motor industry had a glaring example of this during the recent visit to Mackinaw island, where 400 spent 6 or 8 hours. In this island, with a circumference of 9 miles or thereabouts, there are many of the prettiest drives imaginable and yet the motor vehicle is barred, the only means of transportation being slow, dusty, fetid horse vehicles. Not only are the means of transportation slow but the roads are swathed in clouds of dust. It is to be regretted that a point of such historic interest to the entire country, and part of which is now a national park, should be kept in such a backward condition. The roads should be oiled and motor vehicles permitted. It would be necessary to have all vehicles travel in one direction only and limit the speed to 15 miles

per hour. With such regulations the roads would be as safe to pedestrians and equestrians as it is at present. Another regulation would be the prohibiting of the muffler cutout as well as the use of headlights at night. With these improvements the value of Mackinaw island to America would be immeasurably increased and that section of the country benefited by the influence of the motor car.

## CHICAGO TO TORONTO

Chicago,—Editor Motor Age,—Kindly publish the best route between Chicago and Toronto, Canada. On account of the shorter distance I would prefer the route by way of Port Huron or Detroit, passing through London, Ontario. Would like to know the best time of the year for making this trip and some information on hotel and garage accommodations. I do not desire to make this trip in record time. Any assistance and information in reference to customs complications and license requirements in Canada will be appreciated.—E. J. Smith.

In the issue of Motor Age July 18 you will find route outlined to Ann Arbor, Mich., which you can follow and continue 38 miles to Ypsilanti, Wayne, Dearborn and Detroit. Detroit to Port Huron is 61 miles over a good gravel road and touches Roseville, Mount Clemens, Muttonville, St. Clair, Port Huron.

The Canadian customs must be complied with, and an Ontario license secured. The license will cost you \$4 and the bond \$10 which will be returned to you upon re-entering the states. If you happen to be acquainted with the customs officer he can allow you a 7-day touring privilege without the usual requirements of the invader of the dominion.

Traveling 143 miles will see you in Hamilton and the roads are mostly good gravel all the way to Toronto. To London it is 63 miles through Kertch, Warwick, Adelaide, Lobo, Hyde Park; and London to Hamilton, 80 miles, is a run through Crumlin, Thamesford, Ingersoll, Woodstock, Oxford, Brantford, Cainsville, Ancaster.

Volume 1 Blue Book contains the running directions from Hamilton to Toronto which is a 47 mile stretch. You will find improved roads with an occasional poor stretch. The itinerary is Aldershot, Freeman, Appleby, Trafalgar, Erindale, Cooksville, Lambton Mills, and Toronto.

At St. Davids the above outlined route can be left and a run to Niagara-on-Lake included.



As for hotels, at Valparaiso is the Spindler; at South Bend, the Oliver; at Kalamazoo, the New American; Jackson, the Otsego hotel; Ann Arbor, Hotel Whitney; Detroit, the Ponchartrain; Mount Clemens, the Colonial. In Canada there is the Tecumseh at London, the Oxford at Woodstock, the Waldorf at Hamilton and Queens or Prince George at Toronto.

A fall tour is delightful, many people preferring that time of the year for their outing. The red hot sun in the middle of the day, together with the dusty country roads tend to make the summer tour objectionable; about the only draw-back to the fall tour is the fact that the roads are liable to be somewhat cut up or worn from summer travel and heavy travel of the farm wagons.

#### ST. LOUIS TO COLORADO SPRINGS

Greenville, Ill.—Editor Motor Age—Will Motor Age kindly advise me which is the best route from St. Louis, Mo., to Colorado Springs, Colo. Would this be a good time of the year to make the trip?—E. M. Gullick.

You will probably find it most desirable to cross Missouri by the route outlined in this issue under the caption Ohio to Texas, describing the route from Trinway, Ohio, to Plainview, Texas, via St. Louis, Kansas City and Newton. But instead of turning south at Newton, you should continue to follow the Santa Fe trail to Hutchinson, and from this point on to Colorado Springs your route is outlined in the routing and map published for the party going from Corpus Christi, Texas, to Denver, Colo. Yes; also the fall months.

#### TACOMA TO 'FRISCO

Tacoma, Wash.—Editor Motor Age—Leaving Seattle on June 2, Mr. and Mrs. H. F. Norton drove to San Francisco in their Stoddard-Dayton. The roads to Tacoma were good all the way and continued so to Chehalis, but from the latter place to Kelso, the going was very rough. From Kelso to Woodland the roads were found only fair, and the same conditions existed all the way to Vancouver, Wash.

From Vancouver the roads were exceptionally good, but from Portland to Grant's Pass more bad roads were encountered. From the pass, however, to Ashland, Ore., they found pleasant riding.

After leaving Ashland on the south slope of the Siskiyou mountains some very treacherous roads were encountered. The turns are bad and require rigid vigilance on the part of the driver. The party found considerable mud in this section, the car sinking at times as much as 18 inches in the soft earth.

The route led thence through Dunsuir to Castella, where they picked up the Pacific highway signs. From Castella to Delta the roads were fair, but from the latter place to Kennett they were much better. From Kennett to Redding, a distance of 30 miles, is a treacherous crooked

road, in many places but 12 feet wide, and often a sheer drop of several hundred feet down the canyon.

From Redding to Tehama were good roads. In fact from the latter place all the way to San Francisco, the only poor highway encountered was between Tehama and Sacramento. The distance traveled was 1,053 miles with not a dusty mile for the whole distance.

#### PLANS IOWA TRIP

Fort Dodge, Ia.—Editor Motor Age—I wish to make a trip from here to Creston and Elliott, Red Oak, Ia., Galesburg, Chanute, Fredonia and Newton, Kan., thence to Bloomington, Lexington, Neb., and back to Fort Dodge via Omaha and Storm Lake. We would probably run north from Fredonia to strike the Santa Fe trail and follow it to Newton. At what points between Omaha and St. Joseph can the Missouri river be crossed?—R. W. Crawford.

You should first go east from Fort Dodge to Webster City, turning south at this point to Boone, Madrid and Des Moines; then southwest through Booneville, Winterset and Macksburg to Afton; thence turning west to Creston. To reach Red Oak from Creston follow the Blue Grass road west through Cromwell, Prescott, Corning, Nodaway, Villisca and Stanton. From Red Oak it is only a short run north to Elliott. Running north from Elliott to Lewis and turning west to Oakland follow then the White Pole road into Council Bluffs via Carson and Weston. You can either cross the Missouri river at Council Bluffs and follow down the west side through Fort Crook, La Platte, Plattsmouth, Wyoming, Nebraska City, Howe, Verdon, Falls City, Hiawatha and Everest to Atchison; or, running south on the east side, pass through Glenwood, Randolph, Shenandoah, Tarkio, Burlington Junction, Maryville, Savannah, St. Joseph, Hall Station and Russellville to Atchison, where the crossing can be made. This is the only point of crossing between Omaha and St. Joseph. Proceed through Lowmont, Leavenworth, Wallula and Piper to Kansas City.

Leaving Kansas

City some of the places touched will be Olathe, Wellsville, Ottawa, Garnett, Colony, Iola and Humboldt to reach Chanute; continuing to the south you will reach Galesburg; then turning west to Fredonia. Then your best route, as you suggest, will be to retrace to Ottawa, where you will strike the Santa Fe trail, which will take you to Newton. The wayside towns on this section of the route will be Williamsburg, Waverly, Emporia, Cottonwood Falls, Elmdale, Clements, Florence and Peabody. You should continue on the Santa Fe trail beyond Newton through Halsted, Burton, Hutchinson, Nickerson, Sterling, Lyons and Chase to Ellinwood. Turning north onto the Sunflower trail, this road will take you to Claffin, Wilson, Sylvan Grove, Denmark, Victor, Beloit, Glen Elder, Downs, Portis, Smith Center, Reamsville and Franklin. Bloomington is but a short distance west of Franklin. To reach Lexington, return to Franklin, then continue north on the Sunflower trail through Macon, Minden and Newark to Kearney, thence west over the Platte Valley route through Elm Creek to Lexington.

To reach Fort Morgan, as suggested in a former letter, continue westward from Lexington via Willow Island, Gothenburg, Maxwell, North Platte, Sutherland, Paxton, Ogalalla, Brule Station, Julesburg, Sedgwick, Proctor, Sterling, Merina Station and Brush to Fort Morgan.

To return via Omaha and Storm Lake you should retrace to Kearney and continue



OLD MILL ON LEHIGH RIVER NEAR STODDARTSVILLE, PA.

# Late Road Reports for the Motorists

**T**HE Touring Club of America reports that the historic Newburyport turnpike is in good condition and by its use much time and 14 miles are saved on the route from Boston to Newburyport and Portsmouth.

Leaving Boston via Massachusetts avenue this route goes over Harvard bridge, turning right at Central Square, Cambridge; then along Prospect street until Cambridge street is reached, then turn sharp left, going to Springfield street, through Concord Square and Newton street onto Prospect street again, thence to Union square. This detour is necessitated by road improvements on Prospect street. Cross Union square turning right on Walnut street. Bear right on Chauncy street, passing Broadway park on the right, and into the Felsway. Thence to Revere Beach parkway; to Broadway, Everett, which follow straight ahead through Everett, Malden, Melrose, etc., to Newburyport. At the fork of the roads in Malden pass the electric car barns on the right, being sure to take the left-hand fork of the road.

Brighton to Flint via Fenton is a new route with considerable gravel, although there are a few short stretches of sand and a little clay, none of which is very bad. This is a useful route on the direct line between Toledo and Flint.

Flint to Grand Rapids via St. Johns and Ionia is also new. Like most other roads in

this section of Michigan, this is a mixture of some good gravel and a few stretches of clay. It is not bad at any time, however.

From Lansing to Mt. Pleasant it is good gravel to St. Louis, where this route connects with the new route between Saginaw and Cadillac. It is also gravel practically the remaining distance into Mt. Pleasant.

From Mt. Pleasant to Big Rapids is a mixture of gravel and clay with some sand; fairly good route.

A new route is from Cadillac to Grand Rapids via Evart, Barryton, Remus, Lakeview, Greenville and Rockford. This parallels route 788 but is considerably east and has gravel practically all the way, the Blue Book car going over this in a terrific rain storm. Practically the only exception to gravel is a little sand and a short stretch of old corduroy between Remus and Barryton.

Grand Rapids to Lansing via Ionia and Portland is fairly good gravel most of the way. Some spots are soft with a little dirt.

Ionia to Kalamazoo via Lake Odessa and Hastings is fairly good road with a mixture of gravel and considerable dirt. There is some sand south of Hastings.

From Kalamazoo to Ft. Wayne there is good gravel to Vicksburg. From there to Sturgis it is only fair with some sand not bad at any time. It is fine gravel from Sturgis to Ft. Wayne.

Ft. Wayne to Wabash. The regular route

to Huntington was found to be by far the best and for this year the present route to Wabash will continue to be the only one opened. For 1913 a new route through La Gro will be used, but this is closed now due to new bridge.

Wabash to Goshen via Warsaw. This is fine gravel all the way.

Goshen to Plymouth. This is only fair with considerable sand to Bremen with good gravel from there to Plymouth.

Due to the bridge over the Desplaines river being out on Madison street those going from Chicago to Lombard, Geneva and beyond are advised to jog north on Austin avenue instead of south, then west on Lake street through Oak Park and River Forest to Fifth avenue, Maywood, where turn left, cross the Northwestern tracks and immediately turn right on St. Charles road, following regular directions in route 27 from there on.

The Around-the-Bay route from San Francisco to Oakland via Palo Alto, Los Gatos and San Jose is in excellent condition; also from Fresno to 'Frisco via Merced, Modesto and Livermore.

A suggestion for motorists in the San Joaquin valley is to start early, say 4 or 4:30 in the morning, making a run of 5 or 6 hours, then rest, resuming the day's travel about 6:30 for another 4 or 5 hours. Such a schedule saves both the car and its occupants from the excessive heat and glare of the midday sun.

on the Platte Valley route through Shelton, Wood River, Grand Island, Chapman, Central City, Clarks, Columbia, Benton, Schuyler, Ames, Fremont, Waterloo and Elkhorn to Omaha. Crossing to Council Bluffs, turn north and pass through Crescent, Missouri Valley, Woodbine, Dunlap, Arion, Denison, Kiron and Odebolt to Storm Lake. You are doubtless familiar with the remainder of the trip through Sulphur Springs, Newell, Fonda, Pomeroy and Matson to Fort Dodge.

## CHILLICOTHE TO COLORADO SPRINGS

Shelbina, Mo.—Editor Motor Age—I am contemplating a trip to Colorado Springs in a short time and would like the best route from Chillicothe, Mo., to that city.—W. H. White.

Follow the new Hannibal and St. Joe cross-state highway over good roads to Utica, Mooresville, Breckenridge, Hamilton, Cameron, Plattsburg, southwest 2

miles to the Interstate trail to Kansas City. It is marked straight south into Kansas City over the new bridge and the towns through which it passes need not be enumerated. The poles are marked with blue and white bands.

Two different routes are offered you in crossing Kansas, one called the Golden Belt line and the other the Santa Fe trail, which is the longer. The trail generally is preferred not only on account of its historic connection, but the hotel and garage accommodations are superior for the reason that larger towns are touched. The trail leaves Kansas City for Westmoreland, Martin City, Olathe, Gardner, Edgerton, Ottawa, Williamsburg, Silksville, Waverly and Emporia, 134 miles; and continues to Hutchinson, 122 miles, through Plymouth, Saffordville, Ellinor, Cottonwood Falls, Elmdale, Clements, Cedar Point, Florence, Peabody, Newton, Halstead and Burrton. From Hutchinson

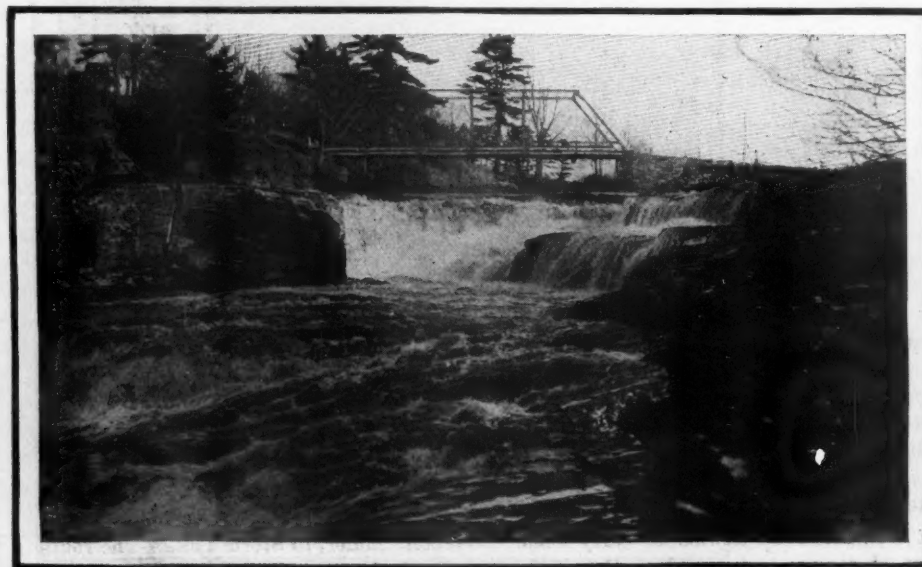
to Colorado Springs the trail is outlined in another communication in this issue from Corpus Christi.

## BATON ROUGE-CHATTANOOGA

Baton Rouge, La.—Editor Motor Age—I am thinking of making a trip in my car from this point to Chattanooga, Tenn. Kindly give me the best route, road conditions, distance, etc.—Chas. D. Raymond.

The more direct route of the two that connect southern Louisiana with Memphis is that which passes through Greensburg, Kentwood, Osyka, Brookhaven, Beauregard Station, Hazlehurst, Central Springs, to Jackson, the distance being 179 miles, which would perhaps make the first day's run. The itinerary the next day might be Tougaloo, Madison, Gluckstadt, Canton, Pickens, Goodman, Franklin, Lexington, Greenwood, Schlater, and Sumner, covering 165 miles. As many improvements are being made on the route north from Baton Rouge it will be well to make inquiries along the way lest some detours may be necessary. Running north from Sumner to Memphis, a distance of 120 miles, the regular route is via Clarksdale, Cloverhill, Tutwiler, Coahoma, Rich, Dundee, Clayton and Tunica.

Turning east from Memphis the most important wayside places in the next 159 miles will be Germantown, Collierville, Moscow, LaGrange, Grand Junction, Saulsbury, Rogers Springs, Essary Springs, Corinth, Burnsville, Iuka, Cherokee, Barton and Tusculumbia. The next portion of the road is easily followed as it parallels the railroad through Leighton, Town Creek, Courtland, Wheeler, Hillsboro, Trinity to Dexter. From this point on the towns passed through are Huntsville, Mayfield, Paint Rock, Larkinsville, Scottsboro, Fackler, Bridgeport, Jasper, Rankin's Ferry—at this point you will cross the Tennessee river



FALLS IN LEHIGH RIVER NEAR STODDARTSVILLE, PA.



by ferry—and then a run of 20 miles brings you into Chattanooga, the total mileage for the day being in the neighborhood of 190 miles.

### CORPUS CHRISTI TO DENVER

Corpus Christi, Tex.—Editor Motor Age—Please tell me how I can obtain a route map or plan showing the best roads between Corpus Christi and Colorado Springs and Denver, Colo.—N. Hale.

After crossing the Nueces river by ferry, with which arrangement doubtless you are familiar, as perhaps with the entire distance to San Antonio, pass through Sinton, Beeville, Karnes City and Floresville, which affords a good motor road nearly all the way. Leaving San Antonio, proceed through New Braunfels, San Marcos, Austin, Round Rock, Georgetown, Granger, Temple, Eddy, Lorena, Waco, Hillsboro, Cleburne to Fort Worth, which perhaps would be your second night's control with Austin the first. Going west from Fort Worth through Benbrook and Weatherford, at the latter place you will strike the Chisholm trail which should be followed through Jacksboro, Windthorst and Wichita Falls, crossing the Red river by a substantial bridge into Oklahoma. This is the only available crossing of the Red river for you.

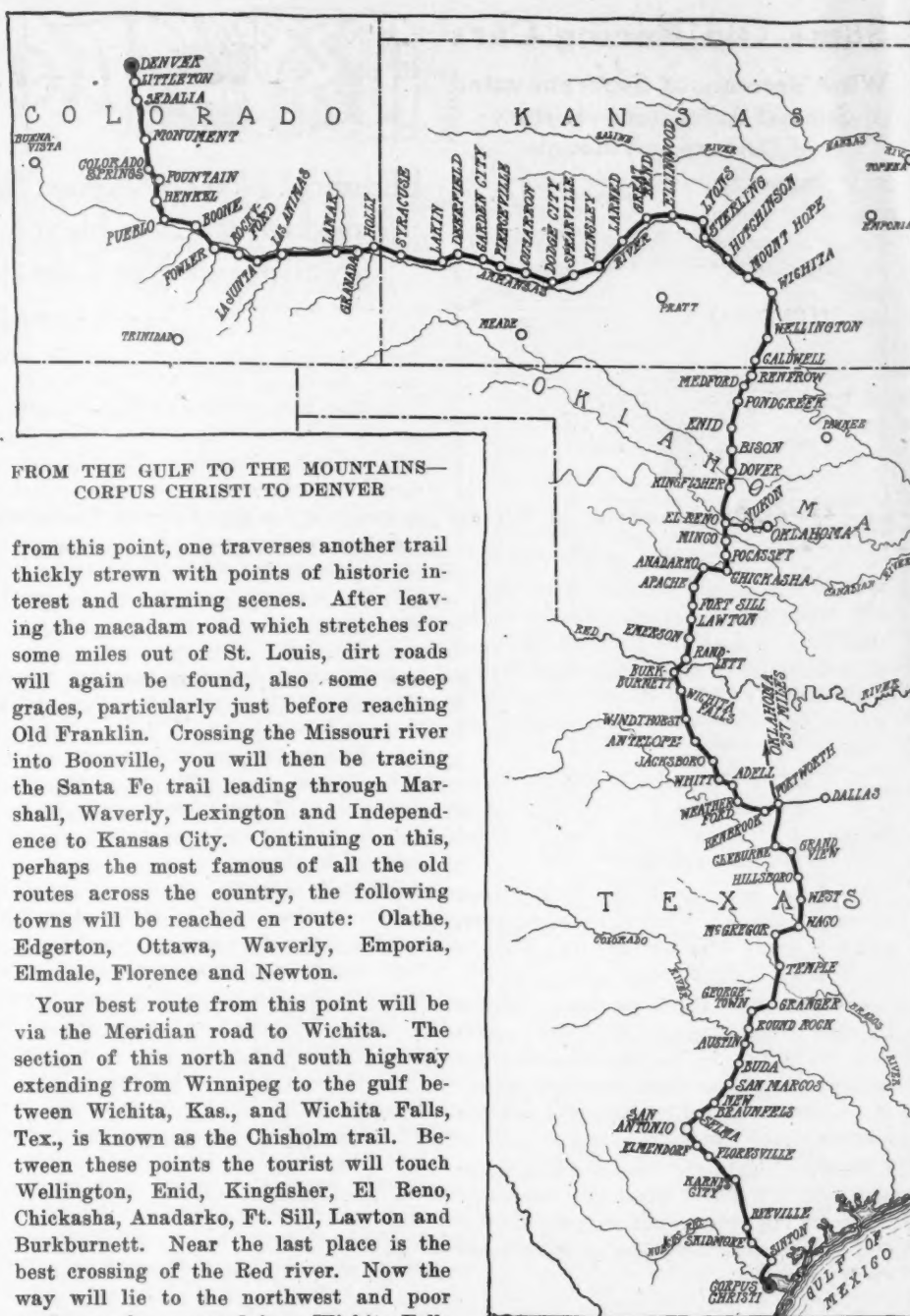
In Oklahoma towns enroute are Lawton, Fort Sill, Anadarko, Chickasha, El Reno, Kingfisher, Enid and Medford. Chickasha may be the stopping place the third night, making the day's run about 211 miles. From Medford soon passing into Kansas via Caldwell to Wichita, and from this point bearing to the northwest, at Hutchinson you will reach the Santa Fe trail. This historic trail follows the valley of the Arkansas river. Some of the principal wayside points are Sterling, Lyons, Ellinwood, Great Bend, Larned, Kinsley, Dodge City, Garden City, Syracuse, and again crossing a state line, proceed through Holy, Lamar, Rockyford and LaJunta to Pueblo, thence north to Colorado Springs and Denver.

### OHIO TO TEXAS

Trinway, O.—Editor Motor Age—We are contemplating a trip to Plainview, Tex., starting the first or middle of September. We should like to have details on the best route from Columbus, O. The National highway to Newton, Kan., is the one we prefer as to latitude.—Subscriber.

It probably will be desirable to connect with the National highway at Zanesville, following this historic road west through Columbus to Springfield, Vandalia and Richmond; or, from Springfield via Dayton and Eaton, returning to the National highway, mostly natural dirt road, leads thence to Greenfield, Indianapolis and Terre Haute, having good gravel, macadam or stone road all the way.

Leaving Terre Haute and the National highway mostly natural dirt road leads the motorist through Effingham and Vandalia, Ill., to St. Louis, Mo. Going west



FROM THE GULF TO THE MOUNTAINS—  
CORPUS CHRISTI TO DENVER

from this point, one traverses another trail thickly strewn with points of historic interest and charming scenes. After leaving the macadam road which stretches for some miles out of St. Louis, dirt roads will again be found, also some steep grades, particularly just before reaching Old Franklin. Crossing the Missouri river into Boonville, you will then be tracing the Santa Fe trail leading through Marshall, Waverly, Lexington and Independence to Kansas City. Continuing on this, perhaps the most famous of all the old routes across the country, the following towns will be reached en route: Olathe, Edgerton, Ottawa, Waverly, Emporia, Elmdale, Florence and Newton.

Your best route from this point will be via the Meridian road to Wichita. The section of this north and south highway extending from Winnipeg to the gulf between Wichita, Kas., and Wichita Falls, Tex., is known as the Chisholm trail. Between these points the tourist will touch Wellington, Enid, Kingfisher, El Reno, Chickasha, Anadarko, Ft. Sill, Lawton and Burkburnett. Near the last place is the best crossing of the Red river. Now the way will lie to the northwest and poor roads may be expected from Wichita Falls to Plainview, as this is a section of the state in which the highways are not of the improved type. The towns along the way are Iowa Park, Electra, Harold, Oklaunion, Vernon, Tolbert, Chillicothe, Danish, Quannah, Acme, Goodlet, Kirkland, Childress, Carey, Estelline, Newland, Memphis, Rowe, Lelia Lake, Clarendon and Amarillo.

Some bad stretches of sand will be found, and especially rough traveling between Acme and Leila Lake. However, this route is preferable to that branching from the Santa Fe trail at Dodge City that would take you by what is called the Colmar cut-off through Liberal, Kas., southwesterly to Amarillo, thence south to Plainview. Bad river crossings and quicksand are liable to be encountered on this route.

It would not be unwise to carry some strips of canvas to be used on the sandy stretches. Although troubles may be an-

ticipated on the latter portion of your journey, on the whole it should be a very interesting and enjoyable trip.

### NEBRASKA INTO IOWA

Ohiowa, Neb.—Editor Motor Age—Kindly give me the best route from here to Storm Lake, Iowa.—Cy McFarland.

Motoring to Strang you should turn north onto the Meridian highway which will take you through Geneva and Fairmont. Now your way is eastward over the Transcontinental highway leading through Exeter, Friend, Milford, Emerald, Lincoln, Havelock, Waverly, Ashland, Gretna and Millard to Omaha. Crossing the Missouri river to Council Bluffs proceed via Crescent, Loveland, Missouri Valley, Logan, Woodbine, Dunlap, Dow City, Arion, Denison, Deloit, Kiron, Odebolt, Shaler, to Storm Lake. The route outlined above is the most direct between the points designated.

## Some Old Racing Cars

### What Becomes of Superannuated Special Speedsters—History of Drivers and Mounts

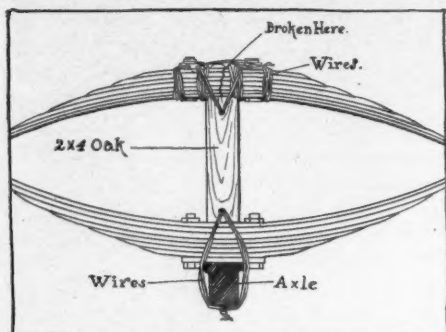


FIG. 1—INGENIOUS TEMPORARY SPRING REPAIR

**N**EW Orleans, La.—Editor Motor Age—What became of the Winton Bullet that went through the fence at Cleveland in 1905? What was its horsepower? Was it chain driven? If it is still in use will Motor Age give me the address of the owner?

2—What is the make of the 300-horsepower motor car that P. Bordino drove at Saltburn-by-the-Sea when he traveled 116.13 miles in 60 minutes?

3—What became of the Fiat Strang drove at Atlanta? What is its horsepower, and how many cylinders has it? What is the address of the owner.

4—What was the horsepower of the Peerless Green Dragon? How many cylinders did it have? Was it chain or shaft driven? Is it true that it was wrecked? If so, how? If not, please give me the address of the present owner.

5—Who bought the Frayer-Miller motor cars used in the 1907 Vanderbilt cup race? What are the addresses of the present owners? What were the prices paid for these cars?

6—What became of Jimmy Ryall and the Matheson that he drove at New Orleans, La., about 4 years ago? What was its horsepower? How many cylinders did it have? Was it chain-driven? What year and model was it? If it is in use now, give me the address of the present owner.

7—Will Motor Age publish special show issues as in the past?

8—In what book and what issue can I find the pictures of the above named racing cars?—F. Kelly.

1—Following the accident to Earl Kiser at Cleveland in 1905, the Winton company retired from racing and the old Bullet now is reposing in the factory museum at Cleveland. The car was an eight-cylinder of 96 horsepower.

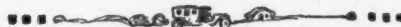
2—The car Bordino drove in the English trial was a Fiat. However, it did not go 116.13 miles in 1 hour; it traveled  $\frac{1}{2}$  mile at that pace.

3—Louis Disbrow has the motor of the Strang Fiat and is using it in his Jay-Eye-



## The Readers'

### Historical Notes of Former Speed Monsters and Their Pilots—Freedom of Early Haynes Models from Choking Due to Valve and Not Cam Construction—Spring Repair



See. It is a four-cylinder and is commonly spoken of as of 300 horsepower.

4—The Peerless Green Dragon Oldfield used to drive is of 60 horsepower, a four-cylinder and shaft drive. The manager of the Chicago Peerless branch states that it is owned by a motorist in New York state, just who he does not know. He saw the car as late as last winter but was not sufficiently interested to ask who had bought it.

5—Motor Age does not know.

6—Ryall no longer is a racing driver. Motor Age cannot answer the other part of the question.

7—That is the present intention.

8—If you have files of Motor Age dating 5 or 6 years back, doubtless you will be able to find pictures of the cars referred to above.

#### AGENT IN ERROR

Denver, Colo.—Editor Motor Age—The agent for the Haynes motor car here says that owing to a peculiar construction of the cam, the throttle may be opened wide instantly without the motor choking or dying down when overfed as is the case in most cars. This I witnessed myself in the shop where the motor had been dead for hours standing in normal garage temperature. What is the reason? How do experts figure gas engine cylinder clearance? Is there any rule for this or is it a matter of opinion?—A. W. Daniels.

The older models of Haynes cars, such as the model S, due to their small valves and relatively heavy springs, will not choke when suddenly accelerated, if the carburetor is in proper adjustment; the size of the inlet valves being such, and their closing being so positive, that they will not admit an overcharge. In the newer models, however, with their large valves and proportionately light springs; the engine is very sensitive to over-acceleration. To prevent the choking up of the motor when the throttle is opened too suddenly, small port area and a perfectly adjusted carburetor are essential, and this result, if attained, is of doubtful value, as a fully opened throttle should deliver a high-speed mixture, and if the mixture delivered with a wide-open throttle is used in a slow-running motor without misfiring, it does not speak well for the high-speed mixture, and it is doubtful if full efficiency is being obtained from the engine. The cam construction can have no possible effect on this behavior. Such an idea is an absurdity.

## Roadside Spring Repair

### How a Clever Driver Temporarily Mended Broken Rear Suspension

**S**AUK CENTER, Minn.—Editor Motor Age—I was called upon to repair a broken spring the other day, which was broken off in the bolt-hole, all four leaves being broken. The spring being broken at the place mentioned precluded a splice as is possible with wood when you can get a chance to wrap a little wire around it, but this could not be done to the one now under treatment. This is the way I patched it up: I got a piece of 2 by 4-inch oak and sawed it off the right length to go on the center of the lower leaves which were not broken, right under the break, boring a hole to admit the end of the spring bolt on the spring that was not broken and also on the end that rested under the broken leaves. Then we bored a  $\frac{1}{2}$ -inch hole in each end of the 2 by 4 through the flat way and wrapped a piece of telephone wire around the sides of each end of the broken spring and passed it through the holes bored, making it fast by twisting the ends of the wire onto the spring clip which was not broken, and which was held by two clamps which held the springs to the clip. We then raised the frame of the car up sufficiently to restore the springs to their normal position and the block was made fast to the lower part and around the axle of the car, twisting the ends as with the ones on top, and here the parts rested, making a good, strong job which would carry the car almost any distance. As a matter of course, there was not much spring to the arrangement but a great amount of jar over rough places. It never gave us a moment's trouble the whole distance traveled—33 miles—and had to be taken out at the end of the run.

The trick of the whole thing was to get the 2 by 4 the right length so as not to allow the broken parts to become separated and pull out of the clip which held them when unbroken, as this would have let the whole side of the rear end of the chassis to list so badly as to cause the other springs to break or twist and make perhaps part of the machinery unworkable or possibly injure it. Fig. 1 is a sketch of the way we made the repair which may be of use.—A. D. Carpenter.



# Clearing House



Question of Power and Economy of Two-Stroke Principle Taken up by Readers—Value of Crankcase Compression in Four-Cycle Motor—Engine Will Not Throttle Down

## Cause of Inflexibility

**Carbureter Adjustment at Fault—Mixture Is Too Weak for Running on Low Speeds**

CENTRALIA, MO.—Editor Motor Age—What is the matter with an engine that misses on low speed and works fine on high and intermediate? Change the carbureter and it will work perfectly on low but not on high. Have used both the models E and L, Schebler carbureter, and results are the same. I use a battery and Splitdorf magneto and the spark is fine. The spark is always hot and perfect, whether running on battery or magneto. The engine is Jackson 5 by 5 inch cylinder with 1¼-inch Schebler carbureter. Is this carbureter large enough?—O. B. Mayes.

1—Your trouble is with your carbureter adjustment as you have guessed, the mixture being correct for intermediate to high speeds, but too lean for low speeds. In your readjustments you have probably enriched the mixture at all speeds, spoiling your high-speed mixture by making it over rich. The Schebler model L is recommended for this size of motor, and with at least a 1½ inch outlet. Your carbureter shows lack of flexibility which may be the result of: 1—Too small size, giving an insufficient volume of air at high speeds, when properly adjusted for low; 2—Improper adjustment of air, the spring being too weak, allowing an excessive opening at low speeds; or your spring may be stiff, allowing insufficient air at high speeds when right for low; 3—Your nozzle opening may be too small, giving the proper proportion of gasoline for high speeds, but insufficient for low speeds, when properly adjusted for high and intermediate.

The best guide to determine which of these faults obtains is to adjust the motor for the best performance at high speeds, throttling down to medium, then adjusting it to the notches on the adjustments which previous experiment determined as best for low speeds, noting if any difference in the performance takes place in the speed of the motor at the fixed throttle and spark position for medium speed. If the motor shows better speed in the first position, you may know that this is the normal adjustment, and that your trouble is with the low-speed adjustment. If, to the contrary, intermediate speeds are improved by the change to low speed adjust-

ment, your high-speed adjustment is wrong. The medium speed is the criterion at all times, and what is best for normal running is best for the whole range. It being determined that the low speed is at fault, place the hand partially over the air intake and observe whether there is any improvement in the behavior of the motor. If so, be assured that your air valve opens too far on low speeds. If not, your nozzle must be too small. If the medium speeds favor the low-speed adjustment, on the other hand, try forcibly opening the air valve at high speeds. If this improves the speed, the air valve is too tight, or the carbureter is too small. If the former, on medium speeds, opening the air valve should cause it to speed up. If the latter, the motor must show a deficiency of power on an open throttle. There is no way to positively determine this trouble but careful experiment, supplemented by the advice of the maker.

## CADILLAC QUERIES

Wilmington, N. C.—Editor Motor Age—What is the gear ratio of the 1912 Cadillac on high?

2—What is the speed of the car?

3—The weight fully equipped?—W. E. W.

1—The 1912 Cadillac is geared 3.66 to 1, on high.

2—Fifty to 55 miles per hour, with standard gearing and equipment is claimed for this car by the maker.

3—The weight of this car is approximately 3,500 pounds with full equipment and full tanks.

## Two or Four Cycles?

**New Yorker Disagrees With C. E. Duryea as to Relative Merits of Types of Engines**

NEW YORK—Editor Motor Age—In reply to Mr. Duryea in regard to two-cycle engines, Mr. Duryea says, "Assuming that the ignition begins at the dead center, although in many cases the heat has not developed nor the pressure risen until somewhat later—" I would like to know, asking as one who looks for the better vision, whether, if the ignition occurs at any other point than the center, as Mr. Duryea here asserts, the maximum compression pressure and the maximum heat wave do not coincide? I would appreciate a little more detail on that matter. I have never even suspected that there was a lag or lead considering the compression and heat development phenomena. I have observed, however, as I have mentioned elsewhere, that the maximum compression pressure does not coincide with the smallest volume—topmost piston position—but on a very slow speed. I have invited discussion on that point, but, to my chagrin, not one picked up the gauntlet.

I must say here that, unfortunately, the same tendency which permits the American to sit down and enjoy a game played by others—say baseball—instead of participating, taking his enjoyment as a player and not as a fan, makes him sit back, waiting for someone else but himself to do the fighting, the arguing about the correctness of this or that view. What are Mr. Duryea's actual observations on the reported difference between heat and compression? Are his conclusions theoretical, or have they been original deductions, but later verified? What permitted him to form his original deduction, if such is the case? What led up to it? or, to say it in a more homely manner—which the straws indicating the direction of the wind?

At this moment my observations are based upon the four-cycle engine, although

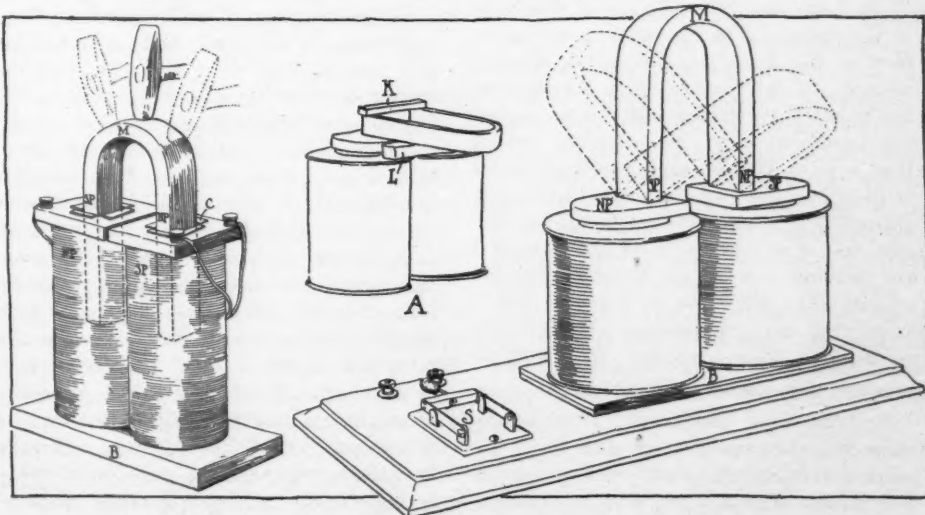


FIG. 2—ONE METHOD OF RECHARGING MAGNETO MAGNETS

my engine differs from his in several things. As far as compression is concerned, there ought to be very little difference in phenomena. Indicator cards do not show a lagging compression wave; but I do not think the indicator a very reliable instrument; I think it too slow. I believe a fast moving film, a ray of light and a deflector would give us some insight and permit us some checking up of our several views on the cycle.

For Mr. Duryea to say, in speaking of the four-cycle engine, that "this is not a real good pump," leaves me wondering whether he takes the public seriously when he so says. Can he point to a better one, even in theory? All suction pumps of the highest order are piston pumps, the only exception being "mercury pumps used for very high vacua." For him to say that those fill not at high speed, tempts me to ask him if he expects a 100 per cent efficiency. What I do believe he calls for, although he does not say so, is that designers ought to produce engines with a greater volumetric efficiency than heretofore obtained. That this is easily done I have observed when dispensing with manifold and carbureter. Add to this greater valve area—theoretically the piston and valve diameter ought to be the same—by using but one valve; then leave the incoming fluid cool, and no further increase in volumetric efficiency can be had in a conventional four-cycle engine at this writing.

But how about the two-cycle, Mr. Duryea—the engine of your choosing. When you assert that a cylinder and piston device, such as any of the mentioned engines are, cannot pump as well below the piston as above, you, a designer, do not mean to tell me that you could not at a moment's notice produce an engine that does have, say, 50 pounds compression below the piston—in the crankcase, for example?

As I stated before, all my observations are based upon the four-cycle, and I therefore do not know whether or not 50 pounds precompression is advisable; but, little hampered by orthodox views, upon first blush I say it is feasible. It is surely so if the action of the exhaust is similar to that of the four-cycle, an action which I cannot yet fully understand, for the reason that my conclusions differ a great deal for accepted views. So much so, indeed, that a new class of engines whose action is based upon a cycle not yet known will appear in the near future. I will not predict that I will bring it forth, although I am striving now to get enough clearness of vision to allow me to proceed; but I know that many others are now working on similar lines and but one will be heralded the winner.

Judging from this angle, I do appreciate the condemnation of Mr. Wall; we want better engines, not more gears. A few months ago I went with a customer to buy a pipe-threading machine, and, de-

scribing the virtues of his machines, the master mechanic pointed with pride to the change-gear device he had. He explained that this was the source of his power. When I attempted to show him the error of his way, that gears made not for power, it took all my ingenuity to withdraw in good standing. My client was a listener to the dispute and was tempted to throw me over as an ass—so he admitted later. But a week later my man asked me for the loan of a 15-horsepower motor to drive a pump. "Sorry," I said, "but the largest I have is a 10-horsepower." "No," came back his reply, "that will not do; it is not powerful enough." "Why, that is easy; borrow a few of those gears of your friend who makes pipe machines," I said. Mr. Wall is right when he says that although several sets of gears are there, the average man does not use them. We want better

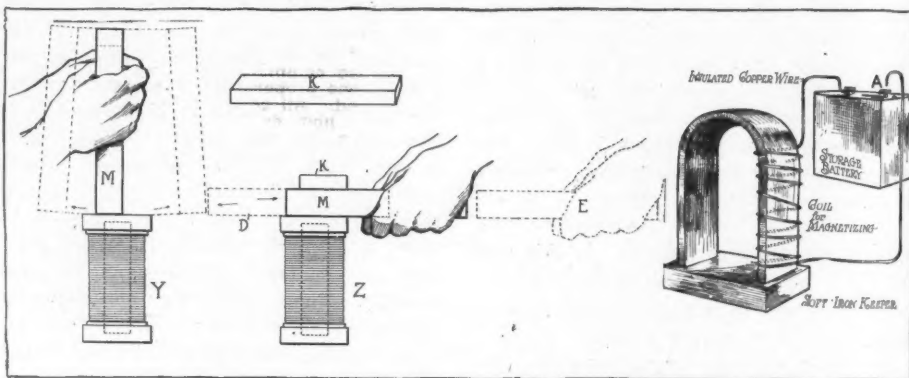


FIG. 3—TWO ARRANGEMENTS FOR MAGNETO RECHARGING

engines, and that is the sole purpose of my lines.

Addressing, as I am, "an old-timer," and speaking of a subject bearing on engines, can Mr. Duryea tell me why the hot tube in universal use a little over 10 years ago has fallen into disuse? At that time all engines fired by means of the hot tube. I have lately returned to it, to find it superior to the electric ignition devices of all kinds. What I cannot do with the spark plug I can do with the hot tube, and, what is more, it is simplicity itself.

At this writing, I take a common four-cycle engine provided with a hot tube, and use crude oil as a fuel and start the engine cold at ½ minute's notice. The engine runs well, controls well. A single-cylinder engine I ran as low as 190 revolutions per minute and as fast as 1,500 revolutions per minute, and could run it faster if necessary. I am using an open flame at this writing for the first 5 minutes only; after that the engine will take care of itself. Of course, it can be done better without an open flame, using a hot tube, but—Rome was not built in a day. In conclusion, I will say that my engine is not cooled, but is insulated by the air in the empty waterjacket; that although its running temperature perhaps is twice as high as that of other engines, no troubles have developed.—P. G. Tismer.

## Duryea Idea Supported Value of Crankcase Compression as Cushion to Reduce Hammer Blow of Pistons

DETROIT, Mich.—Editor Motor Age— I would like to give an account of a little experience I had a short time ago in support of what Charles E. Duryea had to say in Motor Age, July 25, regarding the value of crankcase compression as a means of balance or cushion to reduce the hammer-blow effect of the reciprocating parts in an internal combustion engine.

I was testing out a car of 4,500 pounds, without passengers, equipped with a four-cylinder four-cycle motor of 4½ by 5½ inches, but which used crankcase compression of air to sweep the cylinders of their burned gases after each explosion and also to augment the normal charge as

an auxiliary means to raise the horsepower of the motor from rating of 32.4 to better than 80 H. P. At 1,700 R. P. H. it was discovered all at once when the car shot over the crest of a hill with the power shut off, it sounded as if the motor would surely go to pieces, and the expert who had charge of the car said he would have to ship the car back to the factory as it was an experimental car, and said that it would be impossible to drive the car in that condition. However, he finally gave in to what he thought was my joking about the floating piston and connecting rod and which was partly a joke with myself, but just as soon as the power was applied there was no knocking at all, and, to his surprise, we covered the 150 miles in very fast time, traveling 40 and 45 miles per hour wherever the roads would permit, and when the bearing was renewed, the shaft had not been damaged at all, though the bearing had ⅛-inch play.

This to me was conclusive evidence of the value of crankcase compression; if used for no other purpose than to cushion the hammer-blow of the reciprocating parts, it would be well worth while. However, there are other very important features about the use of crankcase compression in combination with a four-cycle engine other than the wonderful balance which it gives.—M. C. Kessler.



## To Recharge the Magnets

### Operation Not Recommended for Any but Experts—Outfit Is Illustrated and Described

SHELBY, Mont.—Editor, Motor Age—How may a magneto magnet be remagnetized? How strong a current should be used? Explain fully whether current goes through magnet or whether the latter is wound with wire.—Tobias Johnson.

This process has been fully explained in Motor Age four or five times in previous issues, but as it is so frequently asked, it must be of general interest. In Fig. 3 is shown the simplest way in which to remagnetize a magnet, which will do very satisfactorily if only one or two jobs are to be done. This method consists of winding one leg of the magnet with insulated copper wire, the strength of the magnetization depending upon the number of turns; passing a strong direct current through it. The best source of current is an ordinary ignition storage cell. A permanent connection should be made to one pole of the battery and the other wire rubbed over the opposite terminal, as at A. No permanent connection should be made with this wire because of the danger to the battery in short circuiting it. A soft iron keeper placed across the poles of the magnet will determine the strength of the magnetization.

Where more exact energizing of the magnets is desired, special devices may be used, of which there are two types in general use, shown in Fig. 2. They are

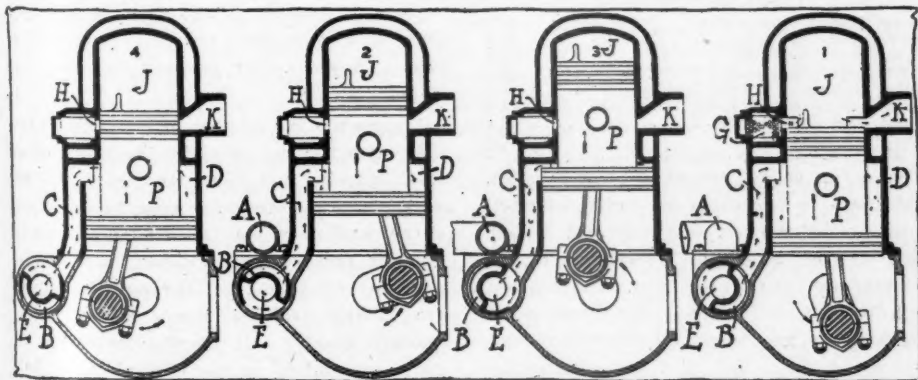


FIG. 4—OPERATION OF ELMORE TWO-CYCLE ENGINE

similar in that both use two cores of soft iron wound with insulated wire in two opposite directions, to differentiate the polarity by the different direction of flow. The upper ends of the winding are connected to some source of direct current, usually the lighting circuit. The size of the wire and the number of turns depend, of course, on the size and resistance of the core, and on the strength of the current. For 110 volt direct currents, several hundred turns of No. 18 wire is usually employed. The two types differ in that one is constructed with a projecting core, upon which the magnet is rocked and rubbed in magnetization, the other having the winding extend above the

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core, the magnet being set down within it a distance of about 2 inches, through a copper cap, C.

In operation, the most important step, and the first, is common to both instruments. It consists of determining that the north pole of the magnet is placed

magnet in the device as shown, gently tapping the magnet with a hammer in each hand. This tapping should be continued for about 1½ minutes, after which the magnet is left in position for another ½ minute, the magnet removed, and a soft iron keeper placed over it immediately.

In using the other outfit, the magnet is placed with the poles opposed and rocked as shown for about 1 minute. It is then laid upon its side, pointing away from the operator, then reversed to point towards the operator. The final operation is shown in A, of Fig. 2, the keeper, K, being placed across the poles, and the magnet withdrawn. This operation requires about 1½ minutes. Another method consists, as shown in Fig. 3, of first, placing the poles of the magnet in proper relation to the poles of the electro-magnets, and brushing it across the latter from five to twenty times. Then the magnet is placed across the coils, with the bend close to the magnets, and the ends protruding beyond the pole-pieces. It should then be rocked over until the pole-pieces are in the position Y, and swung right over until the magnet assumes the position D. This will bring the opposite edges of the magnet M into contact with the electromagnet. In this position it should be rubbed back and forth until this side of the magnet is thoroughly saturated, when it is again rocked over the position D to position Z, the rubbing operation being repeated. This should thoroughly magnetize the magnet, and, after resting in position Z for a few minutes, should be bridged with the keeper K, and slid off the coils as in E. The keeper should be retained on the magnet until it is in contact with the pole-pieces which constitute the base of the magneto.

This is no job for a novice, however, and should not be attempted without experience in this kind of work. The best way is to send the magneto to the factory or a branch.

#### TERM CYCLE MISUSED

Edina, Mo.—Editor Motor Age—Please give me the meaning of the term cycle as applied to a two or four-cycle engine. Taking the word at its literal meaning, a gasoline engine would have but one cycle. Looking up the word in the dictionary, I found that the definition was given as a series of events or a revolution of events; therefore the explosion and the strokes that precede and follow it would be the cycle. Were the terms two and four-cycle merely applied to distinguish the difference between the two?

2—In what way does the carburetor on the Elmore two-cycle car distribute the gas to the cylinders. Is it through the crankcase, or have they a different arrangement?—Motorist.

1—The terms two-cycle and four-cycle are, strictly speaking, misapplications of the term cycle. A cycle is, as you say, a sequence or series of events. The cycle

over the south pole of the core, as, if this relation is reversed, the time of charging will be greatly lengthened, due to the opposition of the magnetism in the magnet to that of the core. It is of prime importance that the polarity of the magnet be retained as it was originally. To this end, in removing the magnet from the machine, the polarity should be definitely determined, and the pole ends properly marked. The polarity of the coil may be determined by the use of a compass or by holding the magnet over one of its pole-pieces. Positive poles repel positives, and attract negatives.

The next step in using the device with the hollow core is to place the legs of the

of a gasoline motor are inspiration, compression, combustion and exhaustion, and hence no engine of any type can have more than one cycle.

The use of the term cycle is an erroneous but general contraction from the original term, stroke cycle, the word stroke being dropped for brevity. A two-stroke-cycle, meaning an arrangement of motor operation wherein the complete cycle of four functions, is accomplished in two strokes of the piston. A four-stroke-cycle is an arrangement which requires four piston strokes to accomplish one cycle of action.

2—The Elmore carbureter does not distribute. The gas is drawn from the carbureter by the suction of the air pump, which is the chamber at the lower end of the cylinder, in which the enlarged piston-end reciprocates. In their passage to fill the vacuum in the pump the gases are led through a rotary sleeve distributor, actuated at crankshaft speed by silent chains. This distributor is made in two parts, an outer and an inner, the intake of gases being through the outer part. On being compressed the gas is led through the inner portion of the distributor to the inlet of another cylinder. This arrangement does away with crankcase compression. Fig. 4 shows the operation.

#### CLOSE VALVES CARBONIZE

Ipava, Ill.—Editor Motor Age—I have a model 19 Haynes car equipped with a Splitdorf low-tension magneto. It is set so that the armature leaves the field  $\frac{1}{4}$ -inch with cylinder No. 1 on the upper dead center on full retard. Is this correct?

2—With this car after running 400 or 500 miles the valves carbonize so that they have to be taken out, cleaned and ground. Then the compression is good. I use medium oil, ordinary commercial gasoline in the model L Schebler carbureter. Would a different oil prevent the engine from fouling so badly?

3—Where is this engine manufactured?—Albert Shields.

1—Your magneto, if set as above, is right.

2—Your valves are set too close; lower the adjusting screw on the push-rods. There should be the thickness of an ordinary business card of play in your push-rod. The oil you mention is recommended by the manufacturer.

3—The Haynes company manufactures its own motors at its Kokomo factory.

#### SPRING CHANGES ON BRUSH

New Boston, Texas—Editor Motor Age—Please advise me as to whether elliptical springs could be substituted on a Brush car in place of the spiral springs.—Gordon McCullough.

Yes; but it is probable that if the change would make the riding enough easier to justify the additional cost, the maker would incorporate that style of spring in the design. The cooling system of the Brush is very satisfactory as it is.

# What Kills the Tires

**Tire Life Depends on Care—Large Tires More Economical Than Small—Dealers Carelessness Responsible for Injury to New Tire—Non-Skids Last Longest**

NEW YORK—Editor Motor Age—The manufacturers of pneumatic tires have exhausted nearly all of their resources in producing a good article that will stand up under hard service with a reasonable amount of success; but the owner still regards his tires as the chief source of weakness and trouble, and he blames the manufacturers for every puncture, blowout and general breakdown. The tire problem is today the most momentous one that engages the attention of car owners and makers, and judging from the number and kind of patents applied for it would seem that inventors were fully alive to their chance of making a fortune through a substitute device for the inflated rubber tires, or at least some improvement that will greatly lengthen their life-time of work.

Tire troubles are today considered to be due to the following causes, and their percentages will indicate what the owner can do toward lessening his expenses in keeping his car properly shod:

#### TUBE TROUBLE

	Per cent
Normal wear	40.0
Pinched or nipped in mounting	15.5
Valve defects	12.5
Defective mounting	12.0
Sand and dirt in casing when mounting	8.0
Running on deflated tubes	6.8
Wrong cover holders	5.2

#### CASINGS TROUBLE

Normal wear and tear	36.0
Perforation by nails, etc.	25.5
Insufficient inflation	16.5
Cuts easily repaired	5.8
Outer damages, layers destroyed	5.6
Damaged by oil or fatty substances	3.8
Rusty and dented rims	3.8
Sudden braking	1.5
Shifting on rim	1.5

• From a study of these percentages, which are the result of carefully collected data by authorities, one may get a fair idea of the chances an owner has of increasing the life of his tires. In the casings it will be noticed that outside of perforations and insufficient inflation the chances of a tire lasting a normal lifetime are good. In the matter of tubes, the life depends a good deal upon making perfect mountings and avoiding pinching or nipping and defective valves. With these causes removed or reduced to a minimum, the tire stands a fair chance of lasting until normally worn out.

Careful car owners are beginning to realize that the life of tires depends a good deal upon their use under proper conditions, and their responsibility in the matter must be shouldered properly before they can blame the manufacturers. The makers of tires are today conducting an educational campaign in the interests of both the users and producers.

Naturally there is a tendency on the part of users to choose small rather than large tires. The small ones cost less in

the beginning, but if the car is a heavy one the cost in the end is greater. The proportion of the tire to the load is a matter that can best be left to car and tire makers. Experiments are now being made to ascertain the exact size of tires for certain loads, and when this has been worked out mathematically much better results will be obtained in tire longevity.

An overloaded tire has a short life. There is no reasonable argument for disputing this. A small tire placed on a heavy car lasts from one-half to one-third the time a larger one will. This has been proved in any number of actual tests. A poorly inflated tire likewise loses many years of usefulness. It gets rimcut, and this practically means its early consignment to the junk heap.

There is no standard opinion as to just how much air a tire needs. The only safe way is to pump it up until it remains round under the load. When running light a car may thus have a tire with far less air in it than when running loaded. With two people aboard the tires may be perfectly round and hard, but if four or five additional people are taken in they may be too flat. A rule that is generally observed is to load the car with its normal number of passengers and then inflate the tires until they stand perfectly round and hard. They are then properly inflated for all emergencies.

Besides the car makers in specifying the right sizes for the cars and the users who must exercise judgment and care, there are the tire dealers who must be enlisted in the work. When the tire is shipped from the factory to the dealer, it may be in perfect condition, but through improper care in the dealer's hands it may deteriorate greatly. It may be exposed to light, heat and oil in the dealer's shop, or carelessly kept in some obscure corner where other articles fall on it. Fully 10 per cent of new tires is injured in some of these ways. The users therefore must see to it that they get a perfect tire from their dealer, and not one that has been held for a long time in the shop and subjected to deteriorating conditions. Sometimes dealers realizing this will offer bargain prices on tires, wishing to dispose of their old stock which has deteriorated on their hands.

No matter how good the material of a rubber tire may be at the time of manufacture, it deteriorates with time and exposure to light, heat and oil. The inner tube of rubber may be overcured in the manufacture and its life thus taken out of it. The desirable quality in the inner



# Causes of Short Tire Service

**Wear and Tear Only Contributory to Tire Destruction—  
Majority of Casings Are Discarded Before Worn Out  
—Owners Should Understand Manufacture**

tube is elasticity. Without this it quickly breaks under the pressure of the air. Some inner tubes are of unusual thickness, but this does not always mean a stronger tire. The more inferior the material used in their manufacture, the thicker the walls of the tube must be to resist a given pressure.

The casing, on the other hand, which confines the inner tube within certain limits, is built up of different materials to make it answer the purposes of hard use. The casing has as its foundation a fabric composed of closely spun cotton, which is protected by the overstock of rubber. The material and its manufacture must determine to a large extent the value of the casing. Sea Island cotton makes the best foundation for the covering and Egyptian cotton comes next, but in some of the cheaper tires short staple cotton of an ordinary nature is used. Unless the cotton threads are long, tough and compactly woven, the strain on the casing will not be uniform and steady. The result is the casing splits at its weakest point and permits the inner tube to wear through at this point.

Usually three plies or layers of cotton fabric are used for the standard road tire. A specially prepared cement is forced through the meshes of the cotton fabric, and the layers vulcanized together by being passed between hot rollers. Finally the "overstock" of rubber is put on and the whole mass vulcanized in one roll. The overstock of rubber is intended to act as a cushion to protect the tire from severe blows. If this rubber is too hard it fails to act as a perfect cushion, and if too soft it will wear away quickly and expose the inner cotton fabric to road friction.

In the whole process of tire making, whether we consider the inner tube and casing separately or together, there are chances of defective workmanship creeping in. Some manufacturers claim that it is impossible to lay down inflexible rules whereby perfect tires can be turned out without a sign of defects. The best that can be done is to follow certain rules and then ultimately determine the results in each individual case by testing. Even then some defective tire will escape the vigilance of the experts and find its way on the market. But for the protection of the users the makers guarantee all their tires against defects of material and workmanship. Little more could be asked when we consider the delicacy of manufacture and the ease with which defects may creep in.

Understanding the intricate nature of the tire manufacture, the average car user

is in a better position to conserve the lasting qualities of the article. The casing and tire are made to withstand a certain strain, and this strain should not be greatly exceeded by overloading. The rubber overstock of the casing is intended to protect the cotton fabric and to act as a cushion. Anything which cuts or unduly wears off this overstock must of necessity weaken the inner fabric. With the latter properly covered and protected, there is little danger of its breaking or tearing unless there is a defect in the material.

Oil, heat and sunlight injure the inner tube much quicker than they do the rubber of the casing. For this reason they should be amply protected. Sand, grit or foreign substances that work in through the casing scour and ruin the inflated inner tube. There is nothing which will cause a quicker deterioration. On hot days the use of a little non-friction powder inside of the casing will tend to reduce the heat that attacks the inner tube.

The general use of non-skidding tires today is for two purposes. Originally adopted simply to keep the tires from slipping or skidding, it has been found that the protuberances, whether of rubber, metal or other substances, protect the casings from wear and tend to prolong their life of usefulness. In some cases when the protuberances have all been worn off, the casing is practically as good as new, for it has not been worn down any by use. One practically has a new tire then equal to any plain tread shoe. While no guarantee is made by manufacturers as to the mileage before the protuberances of the non-skidding tires are worn off, it is generally estimated that they last for something like 1,500 miles.

The average cost of the non-skidding tires is from 18 to 20 per cent higher than the plain tread tires. Today about 40 per cent of the output of tires are of the anti-skid type. It is a question whether the owner of a car prefers to pay the extra cost for the non-skidding tires, and obtaining thereby the increased mileage from them, or to purchase the plain treads and depend upon the thicker overstock used on some of them.

The tire problem is thus one that is involved in many perplexing uncertainties both to the users and manufacturers. Many new devices are constantly being tried to give greater mileage to the tires. Some of these are abandoned within a short time and others are permanently adopted. Users differ in their opinion almost as much as the makers as to the relative value of the different varieties of

tires. An unfortunate experience with one type will often prejudice a user forever against it, and another man with just the contrary experience will declare his faith in it. There can, of course, be no entire agreement on tires any more than there can be on cars. It is better that it should be so for the interests of the trade. Competition is thus stimulated, and the man with a new idea may place his article on the market and attract buyers. But whatever the value of the various types of tires, there is no question about the necessity of owners using cars, intelligence and knowledge in handling and buying the tires if they would get the best service.—A. S. Atkinson.

Some interesting figures have been given out by the Continental Tire Co. of Germany on tire wear and troubles. This concern has made many experiments on the subject of pneumatic tires, and the following tabulations summarize the defects in tubes and casings, which figures offer interesting comparisons with those of Mr. Atkinson:

## DEFECTIVE COVERS

- 17.3% by reason of running slow with too little air in the tire.
- 3.5% because of rusty and battered felloes.
- 1.5% by cutting of the cover strip through insufficient screwing up of the wing nut, or screw, so that the cover can slip round the felloe.
- 1.8% on account of too sudden braking, rubbing the tire through in some place.
- 0.2% by contact with oil and other fatty substances, which, as is well known, will spoil rubber.

24.3%

Of the other 75.7 per cent we have as follows:

- 29.4% were punctured by nails, stones and pieces of iron.
- 4.3% showed only slight injuries and cuts, which were readily mended.
- 4.9% had severe injuries ruining the upper linen inlay.

38.6%

The last 37.1 per cent of tires were simply worn out or rendered useless by normal causes.

The entire number thereof may be considered as having failed for the following reasons:

- 24.3% by fault of the owner of the car.
- 38.6% from abnormal causes.
- 37.1% from normal wear and tear.

100%

This shows about one-quarter of the entire number of failures of tire covers are due to the fault of the owner or his chauffeur.

In regard to the inner tube, the following has been shown to be the cause:

## DEFECTIVE TUBES

- 13.0% crushed in assembling.
- 7.2% rubbed through by improper assembling, or by sand or small stones in the tire.
- 9.5% by faults in assembling.
- 6.8% from driving without sufficiently filling with air.
- 5.8% by injury from rusty and deformed felloes.
- 4.0% by injury from defective valves and improper handling of the valve.

56.3% from fault of the owner or his employee.

The other 43.7 per cent defects were owing to normal and external conditions, such as: wear on casing from road-friction, decay of fabric and rubber from age, and gradual weakening due to constant pressure.

# The Mathematics of Motoring

## METRIC TIRES AND EQUIVALENTS

Metric Sizes	Approximate Size in Inches
650x 65	26x2 1/2
700x 65	28x2 1/2
750x 65	30x2 1/2
800x 65	32x2 1/2
830x 65	33x2 1/2
860x 65	34x2 1/2
700x 85	28x3 1/4
750x 85	30x3 1/4
800x 85	32x3 1/4
860x 85	34x3 1/4
760x 90	30x3 1/2
810x 90	32x3 1/2
840x 90	33x3 1/2
870x 90	34x3 1/2
910x 90	36x3 1/2
960x 90	38x3 1/2
1010x 90	40x3 1/2
815x105	32x4
875x105	34x4
915x105	36x4
820x120	32x4 1/2-5
850x120	33x4 1/2-5
880x120	34x4 1/2-5
920x120	36x4 1/2-5
1020x120	40x4 1/2-5
1080x120	42x4 1/2-5

FROM the number of inquiries received from motor car owners as to whether or not the particular tires on their cars are large enough and to what pressure they should be inflated, it seems that there is need for a method by which the motorist can find out for himself. All the tire makers supply tables showing what weights their tires are designed to carry and what pressure they should have, but with one or two notable exceptions they neglect to state how to find the axle or wheel load for any particular car.

It is necessary that the weight of the car be known to determine the proper size of tire for it, and the car maker's judgment in fitting a particular size of tire as regular equipment is not in every instance to be taken as final. Some of them are prone to undertire their cars from a false idea of economy. To obtain the exact weight of a car it is necessary to use a platform scale; that is, any scale that has a platform large enough to take the entire weight of the car. Know the weight of the car when it is loaded with all the passengers and accessories, water and gasoline tanks filled, luggage, etc., on board. In other words the car should be weighed when it is loaded with the maximum weight it is to carry. Proceed as follows:

1—Weigh the whole car.

2—Weigh the back of the car. To do this the middle of the step of the car should be over the edge of the platform scale.

3—Weigh the front of the car in the same way, the middle of the step being over the other end of the platform.

If this has been carefully done, the last two weights when added together should give within 20 pounds the total weight of the car found in the first position. Of course the wheel loads are one-half of the respective axle loads as found in this way.

In the tables herewith are shown the average tire sizes recommended by American tire makers as well as the inflation pressures. It is well to see that the tires are of the size specified and kept pumped up to the required pressure. In the matter of oversizes, all the tire makers agree that a larger tire, giving a larger air cushion, is better than a smaller tire with a smaller air cushion. They all recommend the oversize tire as a means to increase tire mileage.

The figures given by tire manufacturers as the most suitable for initial inflation generally take into account the increase in temperature and pressure created by prolonged running. It, however, is useful to know what this increase is. The figures shown in an accompanying table are given by a French authority and are averages computed on tires from 3 to 4 1/2 inches diameter under usual touring car weight and speed conditions. For larger tires the increase is greater on account of the greater rigidity of the cover walls, resulting in greater internal strains in the fabric at the points of bending.

Another tabulation shows what may be termed the standard oversizes made by American tire manufacturers. Ex-

STANDARD OVERSIZE TIRES	
Standard Tire Sizes	Oversizes Made to Fit Same Rims
28x3 takes.....	28x3 1/4
28x3 takes.....	29x3 1/4
30x3 takes.....	30x3 1/4
30x3 takes.....	31x3 1/4
32x3 takes.....	33x3 1/4
34x3 takes.....	35x3 1/4
36x3 takes.....	37x3 1/4
30x3 1/2 takes.....	31x4
32x3 1/2 takes.....	33x4
34x3 1/2 takes.....	35x4
36x3 1/2 takes.....	37x4
32x4 takes.....	33x4 1/2
34x4 takes.....	35x4 1/2
36x4 takes.....	37x4 1/2
34x4 1/2 takes.....	35x5
36x4 1/2 takes.....	37x5
38x4 1/2 takes.....	39x5
40x4 1/2 takes.....	41x5
42x4 1/2 takes.....	43x5
36x5 takes.....	37x5 1/2
36x5 1/2 takes.....	37x6
38x5 1/2 takes.....	39x6
40x5 1/2 takes.....	41x6

cept for the first and third items, which show an increase of only 1/4 inch in thickness over the regular stock sizes, the other tires are 1 full inch wider from tread to tread and 1/2 inch wider from tread to rim than the regular sizes corresponding with them. The two sizes mentioned are for tires of the Fisk type, bolted on the felloes.

## TIRE AVERAGES GIVEN BY FRENCH AUTHORITY

Initial Pressure In Tire, Cold Lbs. per Sq. In.	Working Pressure In Tire, Warm Lbs. per Sq. In.	Increase Resulting from Work Lbs. per Sq. In.
71.116	88.183	17.067
85.339	105.750	20.411
99.562	123.546	23.984
113.785	141.920	28.135
128.008	158.588	30.580
142.232	176.368	34.136

## AIR PRESSURES FOR PNEUMATIC TIRES

Diameter of Tire, Inches	Maximum Weight on Wheel, lbs.	Air Pressure in Tire, lbs. per Square Inch
2 1/2	225	50
3	350	60
3 1/2	600	70
4	750	80
4 1/2	1,000	90
5	1,000	90

## PROPORTIONS BETWEEN AXLE LOADS AND TIRE SIZES

2 1/2-inch tires, all diameters.....	225 pounds per wheel
3. inch tires, all diameters.....	350 " " "
3 1/2x28-inch tires.....	400 " " "
3 1/2x30-inch tires.....	450 " " "
3 1/2x32-inch tires.....	555 " " "
3 1/2x34-inch tires.....	600 " " "
3 1/2x36-inch tires.....	600 " " "
4 x30-inch tires.....	550 " " "
4 x32-inch tires.....	650 " " "
4 x34-inch tires.....	700 " " "
4 x36-inch tires.....	750 " " "
4 1/2x32-inch tires.....	700 " " "
4 1/2x34-inch tires.....	800 " " "
4 1/2x36-inch tires.....	900 " " "

For weights in excess of 1,000 pounds per wheel, 5-inch tires and over are recommended. Weights given apply to car without passengers.



# The Motor Car Repair Shop

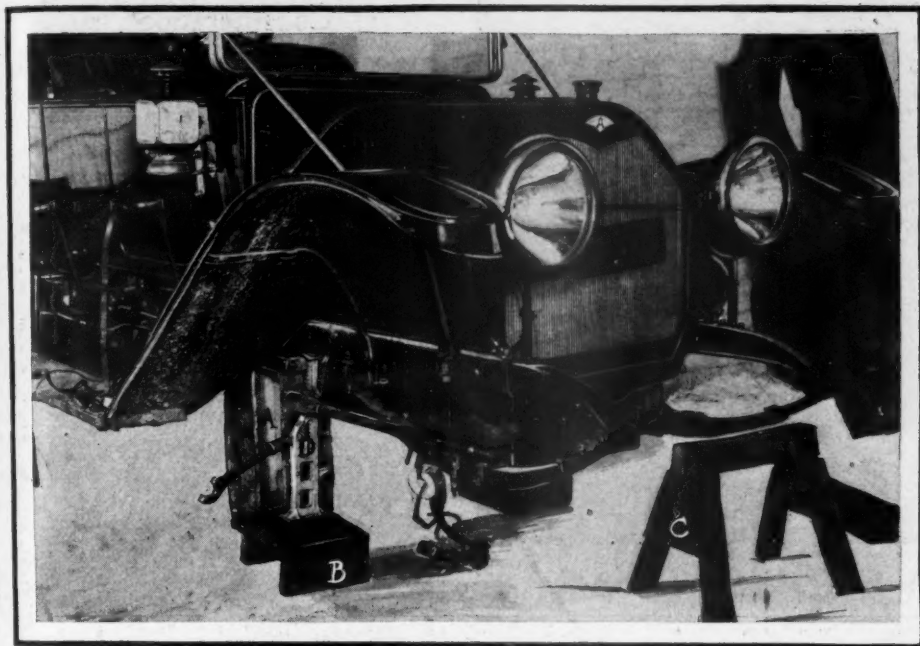


FIG. 1—SHOWING HOW TO USE A JACK

ORDINARILY in jacking up a car the jacks are placed under the axles, but when the latter must be removed for some reason or other the jacks must be placed under the side frame members, which position is more precarious and less to be trusted. It is a good idea in such cases to make use of additional supports besides the jacks, as shown in Fig. 1. In this case the front axle of the car had to be taken off, and to make doubly sure of the frame's support after the wheels were relieved of the load, boxes or pieces of wood A were pressed into service.

First the jacks D, one at either side, were used to raise the frame slightly higher than the wooden supports A; then the latter were placed in position, as shown, and the jacks slowly let down until the car's weight rested on the wooden supports. The jacks could then be removed entirely. Such wooden or other supports are less liable to be tipped over than the jacks, which have much smaller bases. This is especially desirable in such a case as that shown here in Fig. 1, since in taking off the old member and replacing it with another much side jar is given the chassis, due to one cause or another. The supports with large bases give a much firmer support.

The illustration also brings out two useful and easily made accessories for the repair man. These are small stools, such as seen at B, which have many uses, one of which is brought out. The jack was too short to raise the frame to the desired height, hence the small bench or stool was pressed into service. Such wooden stools

should be made of strong material, the one here shown having a height of 6 inches and a top measuring a foot square. It is made of  $1\frac{1}{2}$ -inch material. Small horses C also have many uses in the garage and should not be overlooked. The most convenient size for the repairman is that which measures about 18 inches in height.

## Repair Shop in Basement

Many a motor car dealer who establishes a sales agency gives up the quest

for a place already built and decides that the only way to get the room he needs is to build a complete garage and sales room. This is most costly, and many dealers are resorting to the use of the basements under their sales rooms as garages and repair shops.

One city motor car selling company has remodeled the basement of its salesroom into a very good garage, where the maximum possible daylight is afforded. The basement has been continued out under the sidewalks on two sides—the salesroom is located on a corner—and sidewalk transoms send much of the daylight below. All delicate repair jobs are conducted as near as possible to these sidewalk lights, thus doing away with artificial illumination for the finer work and adjustments and increasing the workmen's efficiency. A view within this garage is shown in Fig. 2, which shows a car which has been run as near to the daylight as possible. Its hood is partly under the sidewalk windows, and sufficient light is afforded for carbureter adjusting, for magneto timing, etc.

Under the sidewalk at the other side the workbenches are located, thus affording them the best possible light under the circumstances. Back in the shop, away from the sidewalk lights, jobs which can be readily carried on by the aid of portable electric lights is carried on. Such operations as that shown in Fig. 1 are conducted here. Should the repair man need more light than here afforded, he takes the piece on which he is working over to the workbenches under the sidewalk for more light.

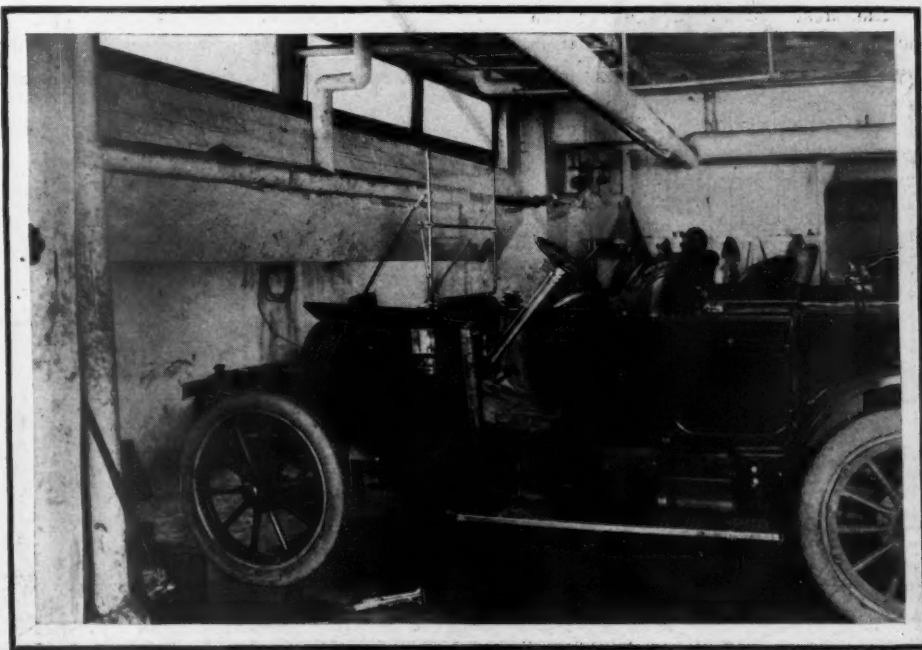
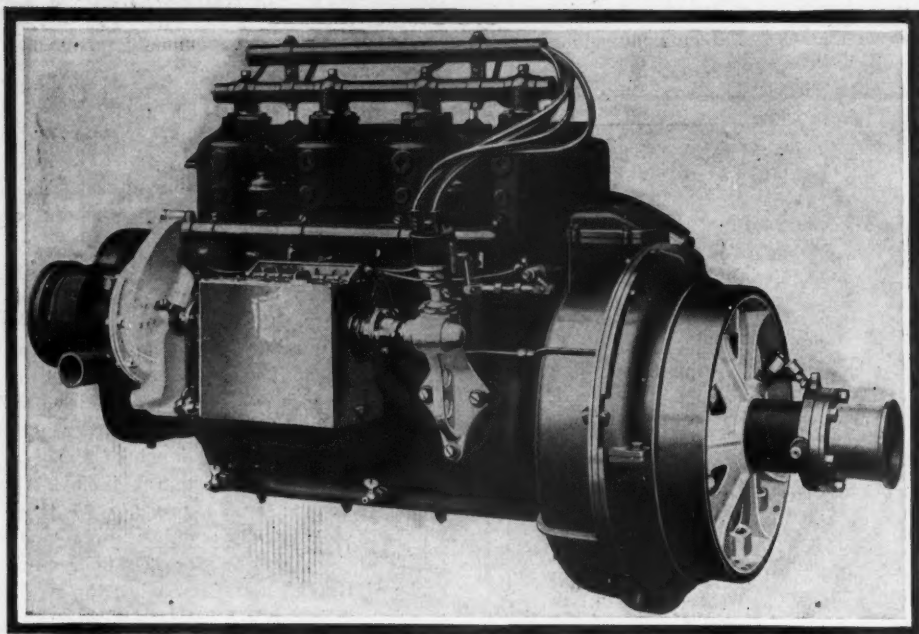


FIG. 2—ILLUSTRATING A BASEMENT REPAIR SHOP

# Rambler Line Reduced to One Chassis



RAMBLER UNIT GASOLINE AND ELECTRIC MOTOR WITH CLUTCH

**R**AMBLER cars for 1913 are marked by several departures from previous practice of the Thomas B. Jeffery Co. The most important of these departures is in the adoption of a single chassis model instead of the three different chassis employed heretofore. The larger motor of 5 by 5½ inches bore and stroke employed in 1912 with its two chassis of different wheelbase has been discontinued, leaving the Cross-Country model, which was the feature of this year's line, with its 4½ inch square motor. The Cross-Country model has been continued as the sole chassis model for 1913 with minor refinements throughout and some mechanical changes in the construction of motor and gearset.

The most radical change for the new season is in the adoption of a combination

electric starting, lighting, and ignition system, which is an integral part of the motor construction; in fact, so much so is this the case that the maker prefers to call the engine a unit gasoline—electric motor. Inasmuch as the electrical system is a part of the chassis construction and design, and not the afterthought of additional equipment so often the case, it deserves special treatment.

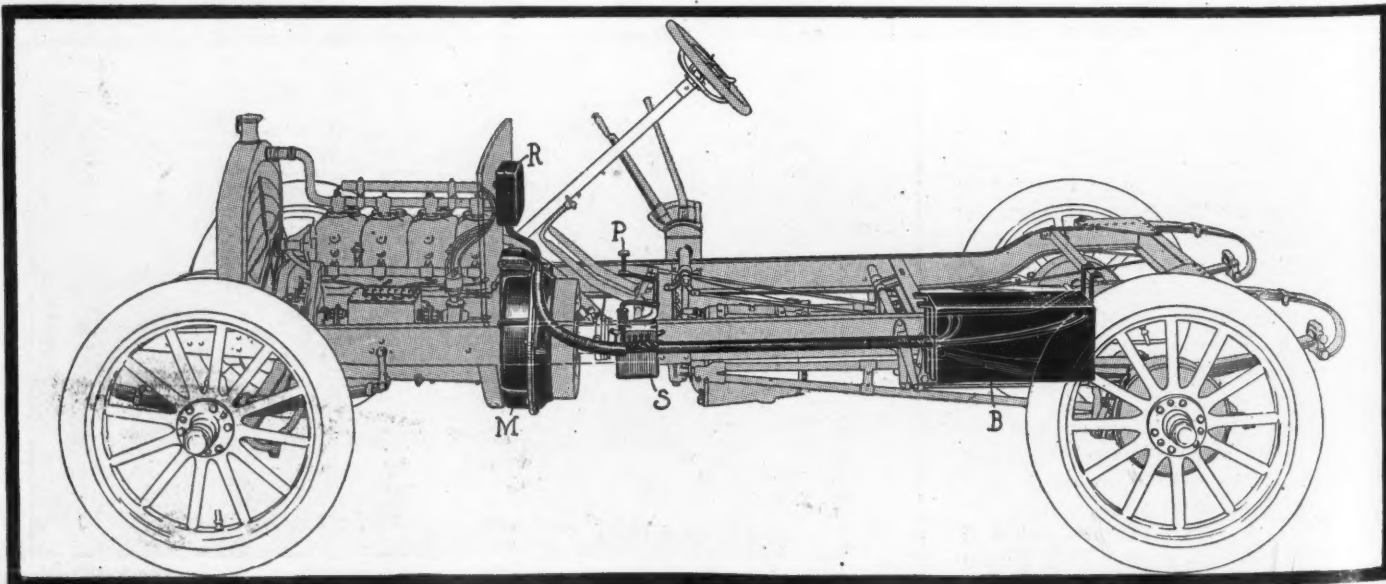
## The Electrical Changes

Starting, lighting, and ignition are all obtained from a single system, which is the design known as the U. S. L. type. The chief portion of the system is the motor generator. This system comprises: 1—a dynamo, which performs the functions of both motor and generator and replaces the flywheel of the gasoline engine;

## Cross-Country Model to be Offering for 1913 Consideration

2—a storage battery; 3—a switch operated by a foot pedal and, 4—a regulator, which is located upon the dash. The phantom view of the chassis shows these four elements as they are installed in the car. The chief portion of this system is, of course, the combination flywheel, electric motor and generator. As shown in one of the illustrations, the flywheel housing also has the function of the field frame, the eight field coils being wound on cores which are bolted to the housing. Within this frame rotates the armature of the dynamo, taking the place of the usual flywheel and being attached to the crankshaft of the engine in the same way as the flywheel is attached. The crankshaft also carries the commutator, the brushes of which are carried on a ring just behind the armature and is held in place by bolts that pass through it for attachment of the rear portion of the housing. The fact that the flywheel is done away with permits its weight to be taken up in that of the dynamo so that the different parts can be made of ample size without increasing the weight of the system unduly. Consequently, all parts of the motor generator are large and substantial, the commutator, for instance, is 10 inches across and the carbon brushes, of which there are eight, are ¾ inch square. It is stated that the total weight of the unit is slightly less than that of the flywheel that it replaces.

When running as a generator, the motor generator charges the storage battery at a 30 ampere rate and a pressure of 24 volts, the controlling relay connecting battery and generator at a speed



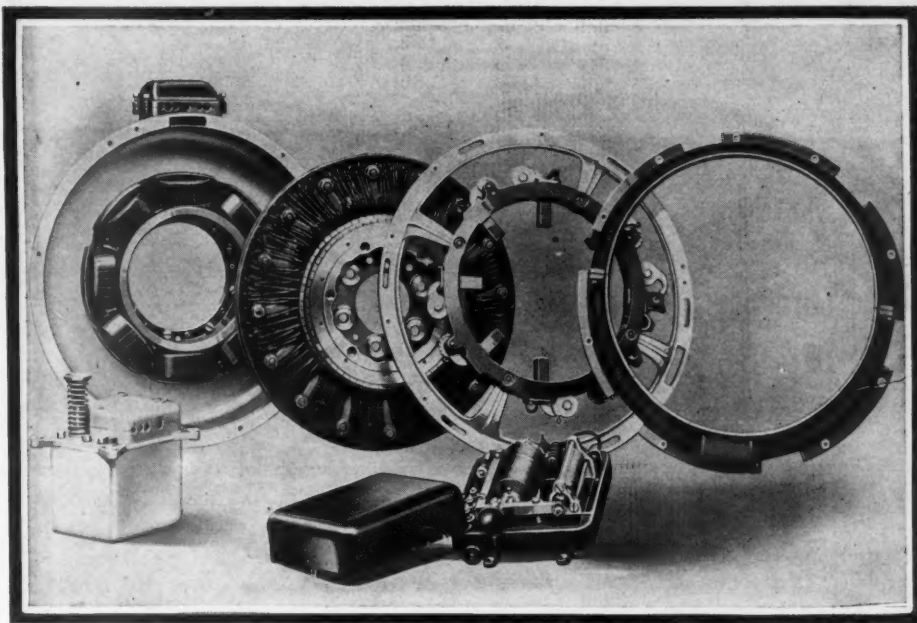
PHANTOM VIEW OF RAMBLER CHASSIS SHOWING ELECTRIC SYSTEM



# Motor Big Feature of the New Model

## Electric Starting, Lighting and Ignition Adopted for Next Year

of from 8 to 10 miles per hour. To start, a foot button is pressed, permitting current from the battery to run the motor generator as a motor at a voltage of 24 volts. The armature is rotated at 200 revolutions per minute and as the crankshaft of the gasoline engine is an integral part of the armature shaft, the engine is turning over at the same speed. Should the weather be cold and carburation pure, the heat created by the friction of the moving parts, it is said, will warm them sufficiently to give the initial explosions. When the engine is running on its own power, the electric motor automatically changes into an electric generator to charge the battery. Lights are supplied with current from the battery at pressure of 6 volts and ignition at 12 volts, the electric system displacing a magneto as a source of ignition current. The generator charges the battery at the rate of 30 amperes, while the current required for ignition and lighting, is together 9 amperes, while, it is stated, that the amount usually required for starting is replenished within 2 minutes after the motor has attained a speed of from 10 to 15 miles per hour. The controller is designed to automatically disconnect the storage battery and generator when the speed of the motor drops below that sufficient to charge, so that there is no opportunity for the battery to discharge through the motor except for starting purposes. The starting button operates an oil switch on the chassis frame side member and the storage battery is hung between two cross members of the frame below the tonneau.



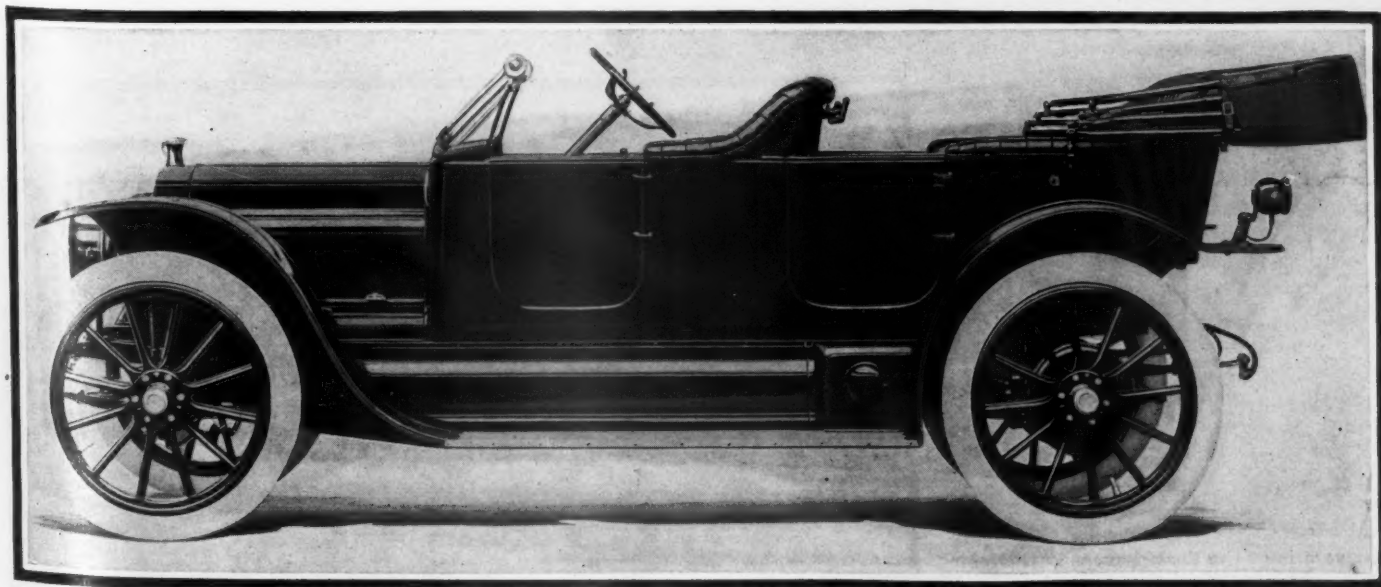
PARTS OF RAMBLER MOTOR-GENERATOR UNIT

To take up the rest of the power plant, it may be said that the gasoline engine is four cylinders of the L-head type with valves on the right-hand side. The cylinders are cast separately and are  $4\frac{1}{2}$  inches bore and stroke through the motor and has three bearings; the use of the self starter has not necessitated the addition of another bearing between motor and flywheel. **Offset Crankshaft Continued**

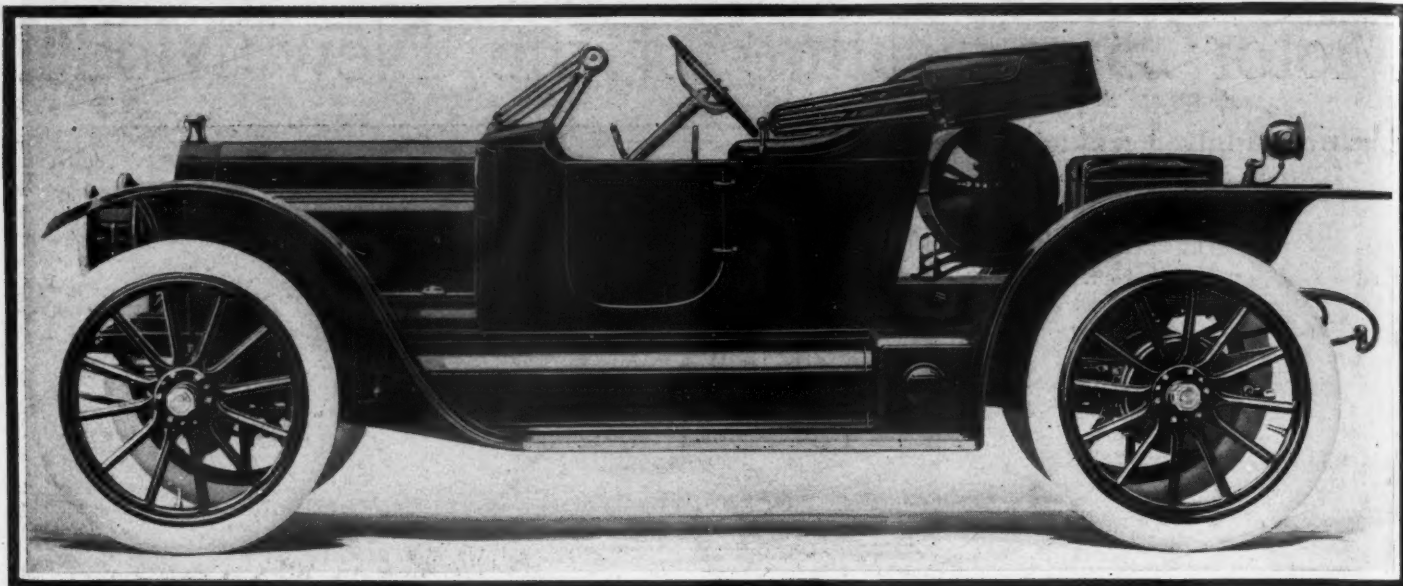
The offset crankshaft which has been a feature of Rambler construction for many years is continued, but the connecting rods have been lengthened slightly to give less wear between pistons and cylinders. Both intake and exhaust valves have been increased to  $2\frac{1}{8}$  inches in diameter and are interchangeable. The only other alteration in the motor is in the use of a De-

troit mechanical oiler of 2 gallons capacity, located on the motor base at the left of the cylinder. The oiler is a seven-feed type with four oil tubes leading to the cylinders and the remaining three to the crankshaft bearings. A splash is contained within the crankcase. The motor suspension is continued as a three-point support, a tubular cross piece, 2 inches in diameter, forming the front supporting members. The entire motor is mounted at a slight rearward slope.

Another change is in the use of a Stromberg carbureter with a hot-air jacket from the exhaust manifold on the footboard. Immediately in front of the steering post is a push button by which the air intake may be closed to give a richer mixture on starting. The new type of radiator which



CROSS-COUNTRY RAMBLER IN ITS 1913 DRESS



CROSS-COUNTRY RAMBLER ROADSTER FOR 1913

appeared for the first time in the 1912 cars is continued in the 1913 Cross-Country. A belt-driven fan immediately behind the radiator is driven from the shaft which drives the pump and assists the latter in maintaining the cylinder cooling. Ignition wiring has been changed from position at the right side of the cylinder to a point immediately above the water manifold, where it is incased in a water-proof tube, as is shown in one of the motor illustrations.

#### Cone Clutch for 1913

Immediately behind the motor-generator-flywheel, and partially within its housing, is the clutch. The latter embodies a decided alteration from previous Rambler design in that for next year it is of the cone type instead of the internal expanding type which has been heretofore one of the features of this product. The new clutch is shown in one of the illustrations and is a direct-acting cone in which gradual engagement is obtained by springs under the leather facing.

Located amidships of the chassis frame is the three-speed selective gearset, which also embodies a slight change in design for 1913. The arrangement of the gears and control connections have been altered slightly, in order to decrease the movement of the hand required in changing speeds; heretofore, it has necessitated a movement of the top of the gearset lever of nearly 1 foot, whereas, in the new arrangement the total movement is but 6 inches. There has been no change in the propeller shaft or rear axle, the latter being rigidly connected to the gearset by means of a torsion tube surrounding the propeller shaft. On each side of the propeller shaft tube are the torsion rods which, as for the past year, are in V form, the spreading arms attaching to vertical arms on the rear axle housing. The rear axle is of the floating type with roller bearings, drive axle shafts and gears forged integral and the wheels secured to

the square taper axle end. The front axle is a drop forged I-beam with an adjustable taper roller bearing.

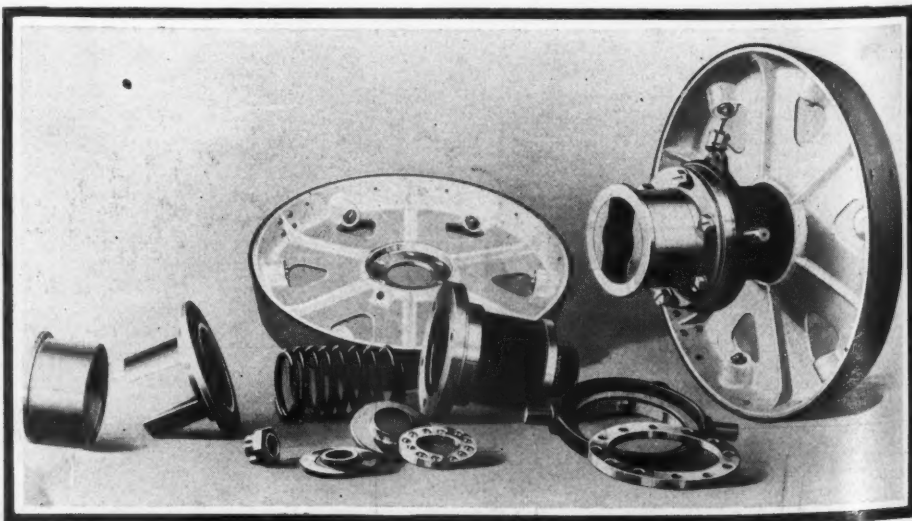
The brakes are internal expanding and external contracting on the rear wheel drums, which are 14 inches in diameter and 2½ inches in width. There has been a slight alteration in the brake connections which makes for simplicity in the new models. The countershafts for the two brakes which formerly were separated, are now combined in one; one being located within the other, the outer one being in the form of a tube.

The frame construction is the same as that of the present model, a tapering straight-line channel to just forward of the rear axle where there is a kick-up to clear the latter. Wide gusset plates are provided at the corners to prevent distortion. Springs are continued as semi-elliptic in front and three-quarter elliptic in the rear. The wheelbase is continued at 120 inches and the tires on all but one of the models—the Gotham—are 36 by 4 inches in size; with the latter body the tires are 37 by 4½ inches in size.

Another one of the recent improvements which has been continued in the new model is in the adjustable steering pillar. The steering column is hinged to the frame and the column rises through a slot in the floor. A metal plate through which this column passes covers this slot. The under side of the slot is serrated and these serrations mesh with others on the floor boards. Clamping bolts hold the plate in any desired position and by loosening the bolts the plate may be moved forward or aft, giving the steering column any tilt desired by the driver of the car.

#### Five Body Models

Five different bodies are fitted to the Cross-Country chassis. These include a four-passenger touring, a five-passenger touring, a two-passenger roadster, a Sedan body with inside drive and seating four passengers and a Gotham or limousine body with inside drive, seating seven. The bodies are trimmed in nickel with body fenders and fillers of black enamel. The upholstery has been increased from 8 to 10 inches depth and a bumper has



RAMBLER CLUTCH PARTS AND ASSEMBLY



been fitted on the forward ends of the front springs. The electric lighting equipment includes  $9\frac{1}{4}$  inch headlamps with port dashlamps flush with the dash line. The rear lamp is mounted on the fender and has a twist switch so that it will comply with local city ordinances.

Aside from standard equipment, the features of the Cross-Country roadster, in the matter of accessories, are that of the trunk with two suit cases; the two closed bodies are trimmed in gray Bedford cord with electric pillar lights between driver's seat and rear compartment in the case of the Gotham body and electric dome light in case of the Sedan.

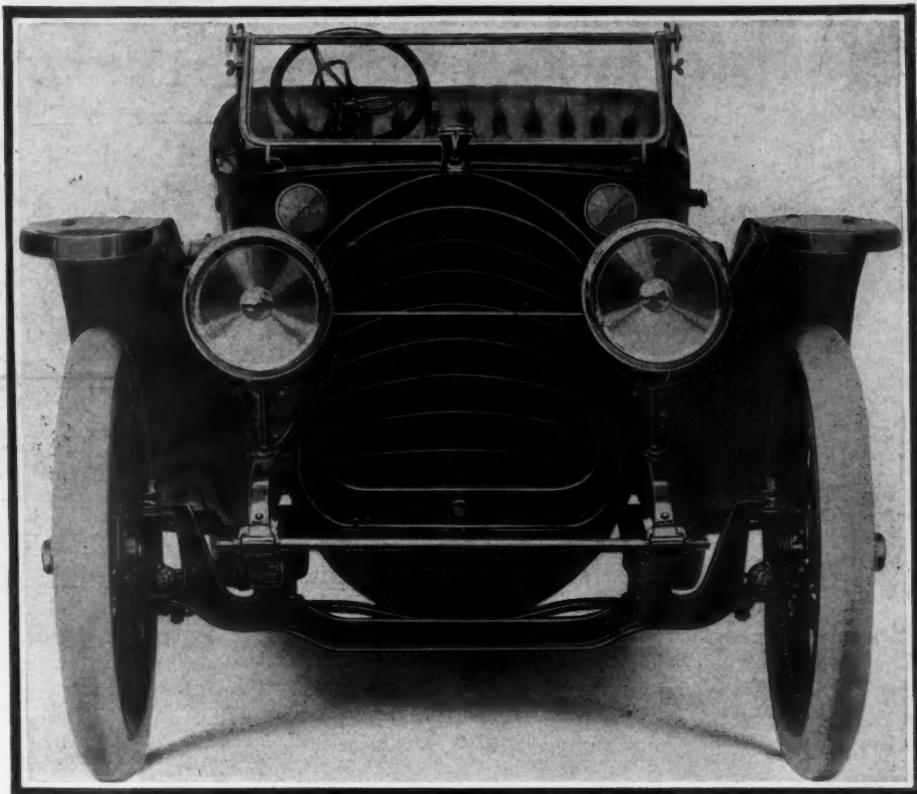
## The Motorists' Bookmen

### Analytical Advertising

**W**ILLIAM A. Schryer has prepared a work on "Analytical Advertising" which is the result of extended experience in practical work in this line. The subject is entered into in a very thorough manner. The principal of analysis as applied to advertising is very well expressed in Mr. Schryer's words:

"The concern of every intelligent advertiser should be to discover principles, that he may work in accord with them to his greatest profit. This premise assumes that advertising, in connection with any business, is for the sole purpose of selling at the greatest profit."

The matter is so composed as to bring out the inter-dependence of even the smallest details of advertising copy. The psychology of salesmanship through written copy is well covered, with its bearing on efficient publicity. The value of definite records is strongly emphasized, many interesting examples of experience being cited to bring out the principles requisite



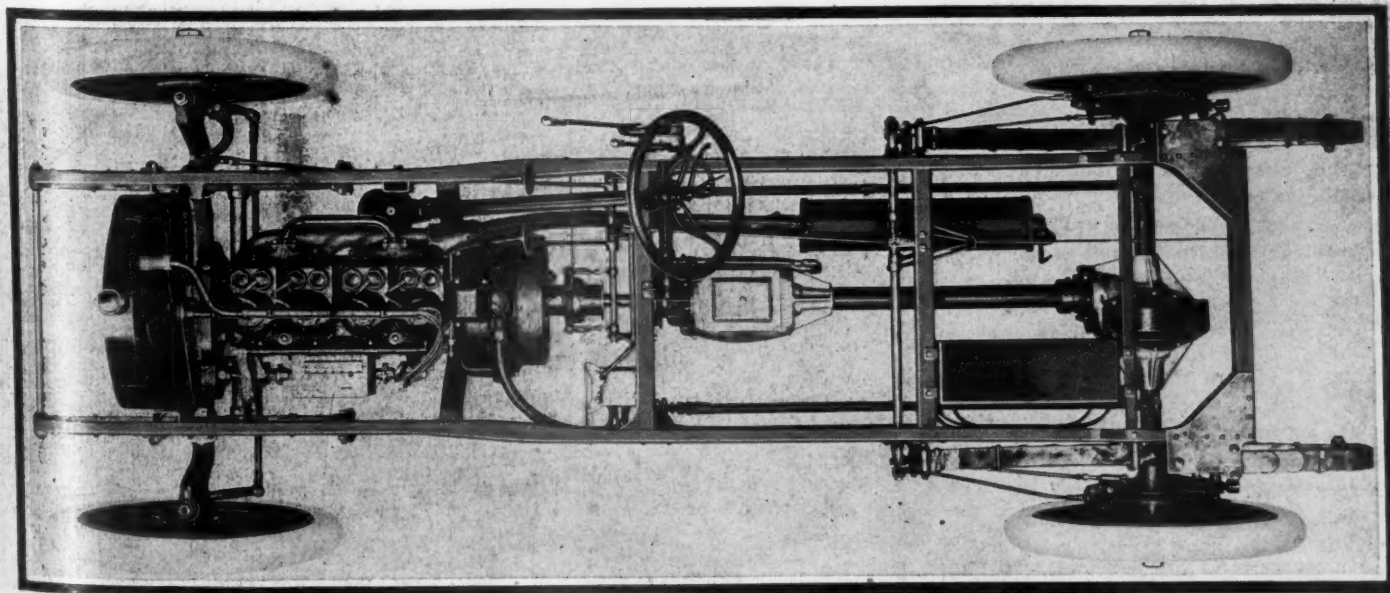
FRONT VIEW OF CROSS-COUNTRY RAMBLER SHOWING LAMP EQUIPMENT

to good results. A successful plan of motor car advertising is described, which is well worth the earnest study of every motor car advertiser. The book is attractively bound in cloth, contains 288 pages well illustrated with diagrams, facsimiles, etc. The Business Service Corporation of Detroit, Mich., is the publisher.

### Elements of Statistical Method

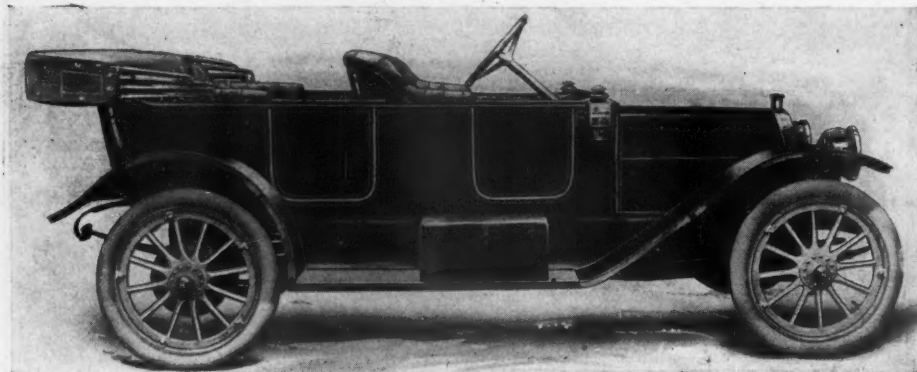
For use as a text for students of statistics, and for statisticians generally, "Elements of Statistical Method" by Wilford I. King, M. A., instructor in statistics in the University of Wisconsin, is published by the Macmillan Co., of New York. The author has avoided complicated mathematics in the belief that sta-

tisticians as a rule are not expert mathematicians. Such a work is unique in its scope in this country, and should prove valuable to any who have statistical work to do. The volume treats comprehensively of the origin and use of statistics and their definition and limitations. The reader is next given an exhaustive treatise on methods of compilation, analysis, and the mathematics of statistical research. The work concludes with an interesting study of the comparison, correlation, and ratio of variation of statistics. A useful appendix supplements the work, containing tables of logarithms and squares. The book sells for \$1.50 net.



VIEW OF THE RAMBLER CROSS-COUNTRY CHASSIS FOR 1913

# Halladay in the Six-Cylinder Field



HALLADAY 32 TOURING CAR AS IT APPEARS FOR 1913

**A**NOTHER maker has joined the six-cylinder ranks. This time it is the Halladay that comes out with the increased number of cylinders in one of its models for 1913. With the one exception of the change from four to six cylinders in the model 50, there is practically no mechanical difference from the three chassis of the present season. Model 50 will have six cylinders of  $4\frac{1}{8}$ -inch bore and  $5\frac{1}{4}$ -inch stroke instead of the four cylinders of  $4\frac{3}{4}$  by 5-inch bore and stroke employed this year. The other two models are the 32, which is mechanically the same as this year's model 30, and the model 40, continued with minor refinements from this season.

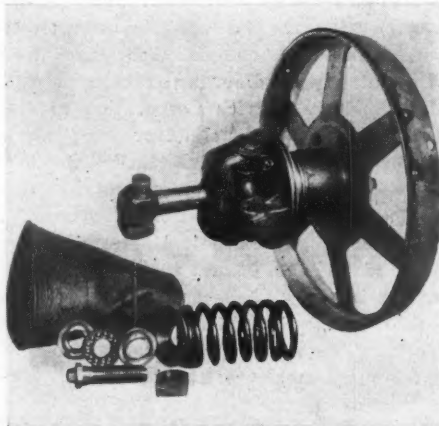
The model 50 has the six-cylinder Rutenber motor, the latest product of the Western Motor Co. The cylinders are cast separately, of the L-head type with the valves inclosed in an easily removable cover plate. Both the camshaft and the crankshaft are in the same horizontal plane and can be removed or adjusted from below after the lower half of the crankcase has been taken down. Both inlet and exhaust valve have a lift of 2 inches. The valve pushrods are lifted by a lever and roller combination, comprising a rocker arm pivoted at one end on a lug dropped from the motor base, the upper portion of the other end bearing on the bottom of the pushrod. At the middle of the rocker arm is a roller of comparatively large diameter which bears upon the valve cam on the camshaft, thus the lift of the valve is almost double that of the cam and the roller prevents excessive wear of the cam.

## Valve Operation

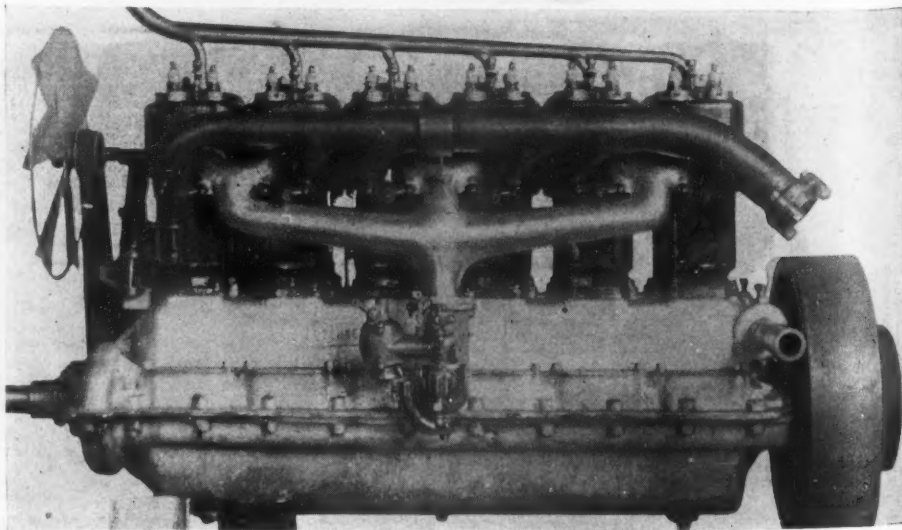
These roller and lever combinations are mounted in pairs and are readily removable as units. Fans are provided with a spring support for maintaining proper tension on the valve. The water manifold has brazed joints. The magneto is driven from a shaft that drives and pierces the water pump so that intermittent strains on the magneto shaft are not transmitted to the gear but are cushioned by the water in circulation.

The waterjackets and valve chambers are cast integrally and the pistons are cast of the same materials as the cylinders. Piston rings have square lap joints and are four to a piston, three above the pin and one opposite the pin, so as to prevent it from working out and scoring the cylinder. Piston pins are made from steel tubing which is hardened and ground; and the piston pin bushings are made from phosphor bronze pressed into the pistons and reamed.

Connecting rods are drop forgings and



HALLADAY CONE CLUTCH



INTAKE SIDE OF HALLADAY 1913 SIX-CYLINDER MOTOR

## One of the New Models is Marked by This Feature of Construction

are of exceptional length to reduce side-wall thrust and wear of the pins. The upper end is split and the pin is held in position by a clamping bolt and lock washer and lock nuts. Bearings for connecting rods and crankshaft are made from die-cast babbitt metal and are split horizontally. Seven crankshaft bearings are supported in the upper half of the crankcase.

Cams are forged integrally with the camshaft, which is mounted on four cast bronze bearings; these two are split horizontally to permit of adjustment. The camshaft gear is cast of semi steel and meshes with a drop forged gear on the crankshaft; both have helical teeth to insure quietness.

A circulating oiling system is employed. In this, the lower portion of the crankcase is itself divided horizontally into two compartments, an oil reservoir below and splash chambers above. Oil is drawn from the reservoir by a gear pump which is surrounded by a strainer. The pump forces oil through a lead to the connecting rod and crankshaft bearings from which it drops to the splash chamber. A float is provided in a separate chamber and a vertical rod with a ball indicator at its top shows the level of oil in the reservoir.

## Double Ignition

Ignition on the Halladay 50 is by means of a Bosch magneto and battery timer and distributor with two sets of plugs, forming a complete double ignition system. The power plant is supported on three points and a cone clutch is located in the flywheel. The gearset is carried amidship on two cross bars and a short subframe. The gearset is equipped with annular ball bearings throughout and the gears and shaft



# Few Changes Made in Models for 1913

## Minor Refinements Mark Product for Next Year of the Streater Company

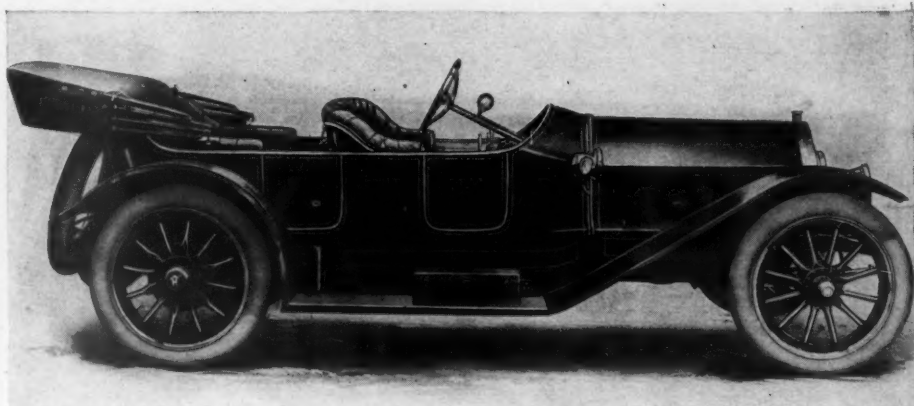
are all chrome vanadium steel. The universal between clutch and gearset is liberal in proportion with hardened and ground surface. It is entirely inclosed so that it may be packed in grease.

The gearset has four forward speeds with direct drive on third. The total gear reduction on the fourth is  $2\frac{3}{4}$  to 1 and on the third or direct drive is  $3\frac{1}{2}$  to 1. The drive to the rear axle is through a torque tube integral with the axle and the car is driven through a pair of radius rods, a spring seat on the axle being free to swivel. The frame is a double drop with a 5-inch pickup in the rear. The rear axle has a pressed steel housing so that by removing several cap screws, the entire mechanism can be withdrawn as a unit. Three-quarter elliptic springs are employed in the rear.

### Rear Axle Construction

The rear axle is of a very rigid pressed steel cone construction and is of the floating type. It is equipped with annular ball bearings throughout with internal service and emergency brakes. All brake connections and brake eveners are made of drop forgings. The front axle is a heavy one-piece drop forging with a steering cross rod carried to the rear. This model is made in two wheelbases, 134 inches on a seven-passenger body and 128 on the four-passenger. Tires are 36 by  $4\frac{1}{2}$  inches.

Model 40 of the Halladay line begins its second season without constructive change but with several refinements in details of body and equipment for 1913. In it is used the same size of motor as in the 50 except that there are four cylinders instead of six. Aside from dimensions of the parts, the construction is almost the same as that of the six-cylinder car. The



HALLADAY 6-30 TOY TONNEAU MODEL AS DESIGNED FOR 1913

wheelbase is  $118\frac{1}{2}$  inches and the tires are 36 by 4 inches.

Model 32 is almost the same as this year's model 30. Either a Rutenber or Continental motor is supplied. The motor is of the long-stroke type with a bore of  $3\frac{3}{4}$  inches and a stroke of  $5\frac{1}{4}$  inches. The details of construction of the Rutenber motor of this size are the same as those of

the larger model already described, while the construction of the Continental motor is similar in many respects. Except for dual instead of double ignition, the general design of the car is the same as that of the larger model.

There is one point about the construction of the 32 motor that is worth emphasizing and that is the size of the camshaft bearings. These are so large that the entire camshaft, cams and all, can be withdrawn through the bearing without removing the latter. The cylinders are offset  $\frac{1}{2}$  inch from the crankshaft to give maximum torque with minimum friction. The Briggs dual magneto is used. The wheelbase is 112 inches and tires are 34 by  $3\frac{1}{2}$  inches front and rear.

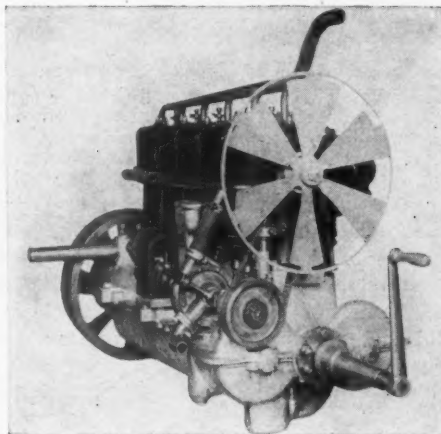
### Halladay Body Types

The types of bodies are supplied on the model 32, a five-passenger touring and two-passenger roadster with trunk and gasoline tank on the rear deck. A neat arrangement is used for carrying a spare demountable rim and tire at the rear of the car. Three rigidly-supported brackets from the body and frame grip the rim so that no straps are necessary, and the rim and tire are held rigid with no chance for the tire to chafe, as there is nothing with which it can come in contact except the rim on which it is inflated. The cars are all equipped with a provision for adjusting the carburetor from the seat and with ventilators in the dash.

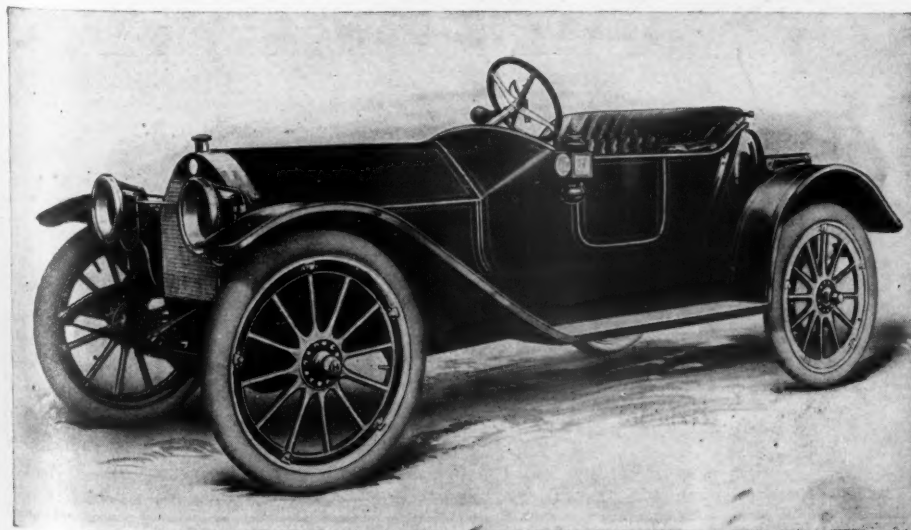
Three bodies are fitted to the Halladay 40, a five-passenger touring, a four-passenger toy tonneau and two-passenger roadster. The car also is electric lighted throughout, the current being supplied by silent chain-driven generator when the car is in motion, and by storage battery when the car is standing still.

The two bodies fitted on the model 50 include a seven-passenger touring car and four-passenger toy tonneau; the equipment is the same as that on the 40.

The body lines and details have undergone minor refinements with a view too improving their appearance and comfort.

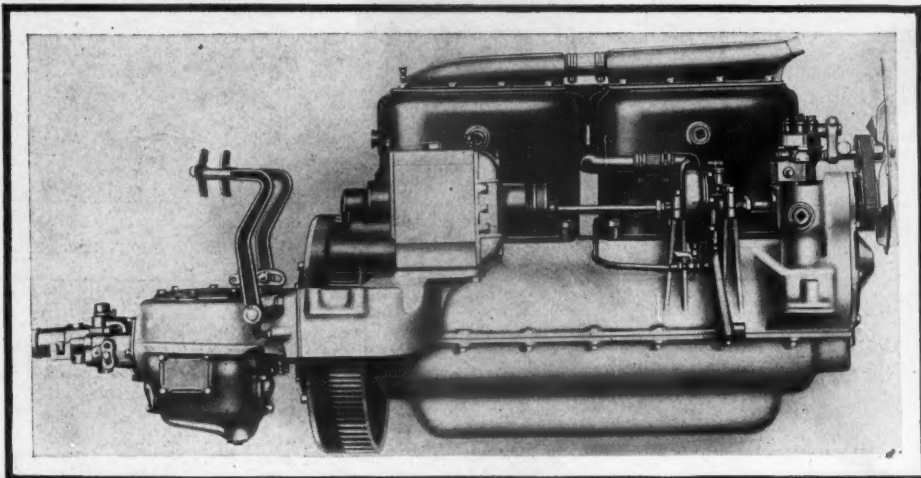


FRONT OF HALLADAY MOTOR



HALLADAY 40 ROADSTER OFFERED FOR 1913 CONSIDERATION

# Hudson Company Also Offering a Six



HUDSON 54 SIX-CYLINDER MOTOR

THE number of six-cylinder motor car manufacturers have been augmented by the Hudson Motor Car Co., which has just announced a model of this type. The new six is to be known as model 54, the figure representing the developed horsepower of the engine on block tests. The wheelbase of this new model 54 is 127 inches, which is 9 inches greater than that of the recently-announced model 37, the company's four-cylinder offering for 1913.

Mechanically, the newest addition to the line is an exact counterpart of the four, except that its proportions are larger to be consistent with the greater weight and size. In fact, it is nothing more nor less than a bigger edition of the four-cylinder machine. The motor is made for the Hudson company by the Continental concern according to the former's own design, and is not a stock product of the latter; the frame construction and its method of bracing is the same for both cars; the gasoline tank is placed in the rear under the frame, necessitating the use of a small air pressure to force the fuel to the carburetor, a feature which is found this year for the first time in the Hudson design; the Delco combination ignition, lighting and starting system, also new to Hudson cars, appears on the six; the rear axle is of the same type as used on the four; the method of bolting the gearbox to the rear of the motor, making a unit power plant construction, is identical on both models.

## Hudson Six Motor

The 54 motor has a cylinder diameter of  $4\frac{1}{4}$  and a stroke of  $5\frac{1}{4}$  inches, giving it a stroke-bore ratio of 1.27. This accounts for the fact that, while the S. A. E. formula gives the motor a rating of only 40.8 horsepower, the actual horsepower developed on the block when running at 1,500 revolutions per minute is 54, according to the Hudson engineers. The motor being an L-head type, the valves are all on one side, the left. The cylinders are cast in

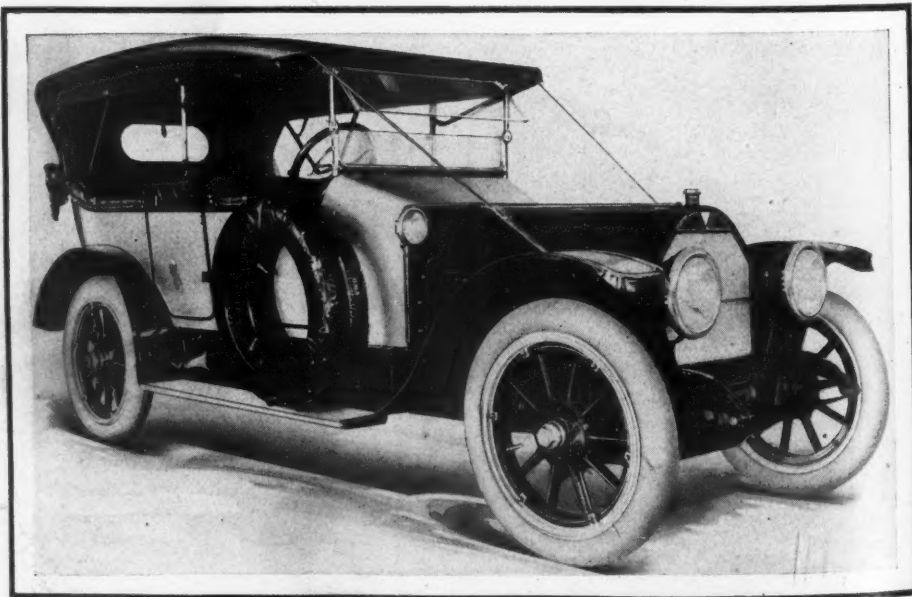
blocks of three, which fact has been taken advantage of to lessen as far as possible the number of manifold connections with the cylinders, the distribution to the ports from the central openings into the manifolds being taken care of within the castings themselves. There are two intake manifold connections, one for each block. The water outlets present a peculiar form, in that they are large and extend over the entire top of each block, the two connections being joined together by rubber tubing. There also is one connection with the water outlet manifold for each block of three. However, this does not apply to the exhaust manifold, which connects individually with each cylinder. These connections are uniform up to the rear two, these being of peculiar design due to the downward slope of the manifold at this point, so that it will pass under the floor of the car and clear the floor boards.

The motor supports are cast integrally

with the upper half of the crankcase. There are four of them, one on either side in front, and one also at either side opposite the flywheel and just to the front of the point where the gearbox members bolt to the motor. The valves are all inclosed, each block of three cylinders being fitted with a cover plate. This feature tends to increase the motor silence and to protect the valve stems, tappets and springs against foreign matter. The valves are interchangeable and have nickel-steel heads. The diameter is 2 inches, and the clear opening  $1\frac{1}{4}$  inch, as on the four-cylinder engine. The valve stems are long, and are fitted with conically-wound springs, which have their smaller diameters at their lower ends. The tappets are of mushroom type and bear on the cams at all times.

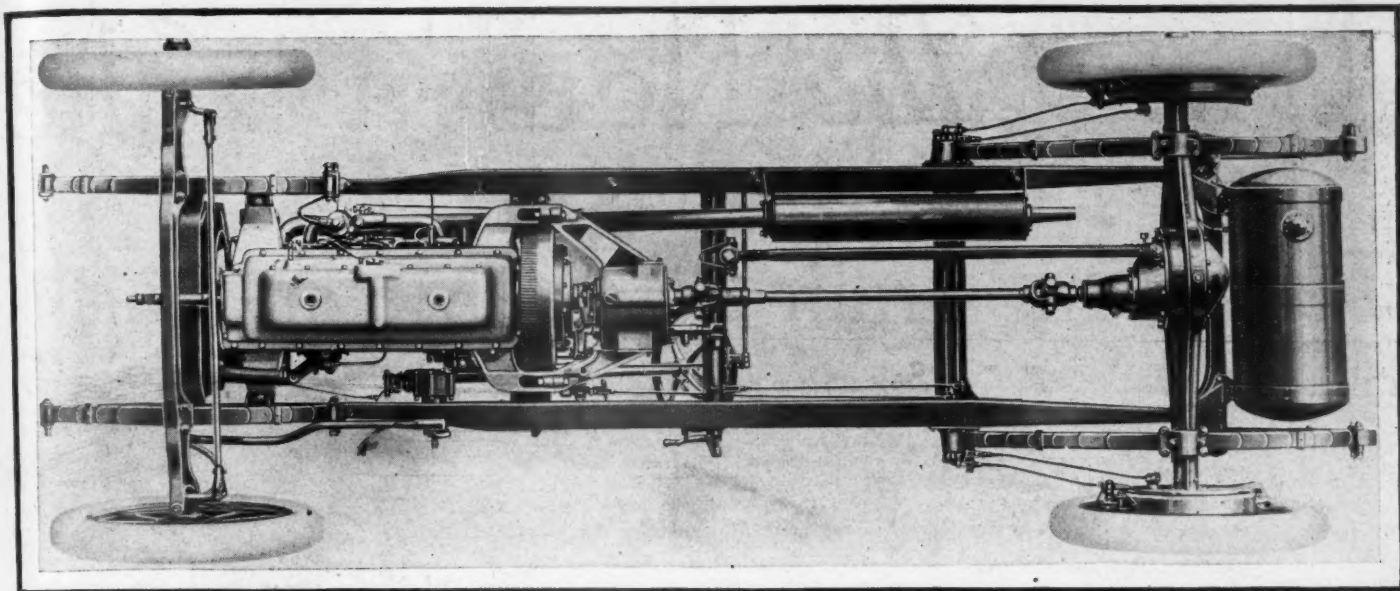
## Pistons Are Extra Long

Pistons are of gray iron and extra long, this latter feature being incorporated to aid in distributing the side thrust to as much of the cylinder wall as possible and thus to reduce the wear on both cylinder wall and piston. The wrist pins are pressed into the piston bosses very tightly, and are prevented from working loose by means of nickel-steel studs, locked by cotters. The bearings within the upper ends of the connecting rods are also pressed into place. They are of hard phosphor bronze and have a diameter of 1 1-16 inch and length of  $1\frac{1}{8}$  inch. A large hole is drilled through the top of each rod's upper end so that the lubricant splashed up may enter the bearing and effectively lubricate it. Like the four, the six-cylinder motor has a three-bearing crankshaft, the bearing sizes being 2 inches in diameter by 2 9-16 inches in length for the front, 2 by 3 inches for the center and  $2\frac{1}{4}$  by  $2\frac{1}{8}$ .



HUDSON TORPEDO 54 SIX-CYLINDER MOTOR





VIEW OF CHASSIS OF HUDSON COMPANY'S 1913 SIX-CYLINDER

inches for the rear. The camshaft, in addition to the twelve valve cams, carries two extra cams for the oil pump and the air-pressure pump. All these cams are integral with the shaft. Its three bearings are of large proportions to preclude any possibility of shaft deflection in raising the valves. Their sizes are  $2\frac{1}{4}$  inches by  $2\frac{3}{8}$  inches,  $2\frac{1}{4}$  by  $1\frac{1}{8}$  inches and  $1\frac{1}{8}$  by  $1\frac{1}{4}$  inches, for the front, center and rear bearings, respectively. The first dimension applies to the diameter and the second to the length, in each case. Timing gears are helically cut and run in oil. Their position is at the front of the motor, and they are effectively covered against oil leakage. The gears are made easily removable from their shafts.

#### Lubrication of Motor

The motor is lubricated by the constant-level splash system, there being an oil reservoir in the extreme bottom of the crankcase to which all the oil eventually finds its way. A distributing plunger pump cam, operated from the camshaft, takes the oil from this point after it has been strained and forces it to the front and rear crankshaft bearings, from which points it passes to the oil troughs, one for each connecting rod end. The lubricant is splashed by the connecting rod ends to all parts of the motor and enters the various bearings through holes drilled in their upper sides. There is no sight feed on the dash, but a pressure gauge there indicates that the lubricant is circulating.

Positive water circulation is accomplished through the use of the centrifugal type of water pump, mounted on the right side of the motor between timer and motor-generator. This pump is carried on specially cast bearings, the supports of which are integral with the upper part of the crankcase. These supports aid in stiffening the shaft in addition to forming a mounting for the pump. Water circulation is aided through the use of large water outlet connections, as already men-

tioned. A belt-driven fan at the front of the engine aids in the cooling.

The Zenith carburetor is found on the new six. It is of the type which, after adjustment is once made at the factory and the proper size of needle and nozzle determined there by experiment, needs no further adjustment at the hands of the user. A vertical connection passes from the carburetor flange to the intake manifold. This connection is waterjacketed, which feature is of use in cold weather, especially, to aid in the carburetion of the fuel. The water is passed to this pipe through connections with the waterjackets by small tubes, the inlet tube being fitted with a shut-off valve to exclude the water from manifold connection when not needed to aid in fuel vaporization.

As to the electric system, this is a combination Delco arrangement, as already noted. It is a new feature on Hudson cars this year, and has been explained fully in a previous issue of Motor Age.

The clutch is within the flywheel in an oil-tight case, and is designed to run in a mixture of half oil and half kerosene. It is of the noiseless disk type, there being eight driving disks of plain steel, and seven driven disks having cork inserts. All disks have a diameter of 11 inches.

A three-speed transmission is used. It is mounted in the same way as on the new 37, by being bolted to the rear of the motor by two arms. The gears are all of hardened steel and are especially wide. They are mounted on roller bearings throughout, which bearings are in malleable iron cages, preventing their working loose in the aluminum gear box, and at the same time making for quick removal when necessary.

Two universal joints are fitted to the propeller shaft, one at the gear box and the other at the rear axle housing. The front universal carries the front end of the shaft, which is squared, in a squared hole, thus allowing the shaft to slide back

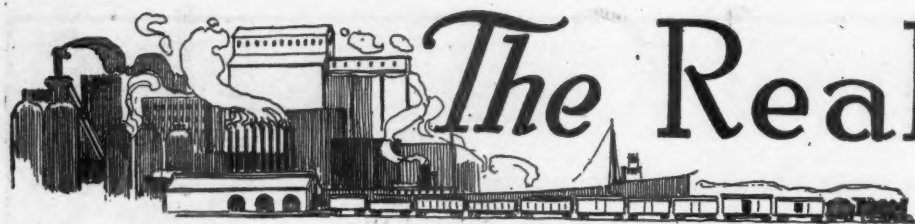
and forth, due to differences of the relative position of the rear axle, on account of unevenness of road surface. The sliding square has a width of  $1\frac{1}{8}$  inch and measures  $5\frac{1}{2}$  inches in length, making it amply strong. From a cross brace of the frame a tapering torque rod passes parallel to the drive shaft back to the rear axle. The front end of this arm, which is the smallest, is fixed in a buffer which has a double spring construction.

#### Pressed-Steel Type Rear Axle

The rear axle is of pressed-steel type and floating, all the car weight being carried on the tubing and none on the axle shafts. The driving gears and differential are mounted as one unit and can be removed without dismantling the entire axle. Pinion and differential gears are mounted on large roller and thrust gearings, the whole running continuously in an oil bath. The driving shafts connect with flanges which bolt to the rear wheels for transmitting the power to the latter.

Brakes are of the conventional internal emergency and external service types. The drums are 16 inches in diameter by 2 inches in width. Twelve bolts fasten each drum to the spokes. The drums are of one-piece pressed-steel construction. Wheels themselves are of artillery type, having ten and twelve spokes, front and rear, respectively, all of which spokes have a diameter of  $1\frac{1}{4}$  inches.

Like the dashes fitted to the 37, those of the 54 are leather-covered, and the various instruments are arranged with the idea of making those which are most important most easily reached. The dash equipment consists of switches, operating lights, self-starter and ignition circuits, magnetic gasoline gauge, gasoline pressure gauge, speedometer, oil-flow gauge and horn bulb. There also is a small dash light which is in circuit with the tail lamp. Should the latter go out for any reason, the fact will be indicated by the dash light being dark also.



# The Realm of the

## Telling the Truth About Motor Trucks

**H**OW can I know that motor trucks will save me money?

How can I find out if I can use motored equipment for delivery work in my business?

How shall I go about it to change from my horse system to motor truck service, and where can I get reliable information about trucks?

These are questions which are in the minds of many business men just at this time, when so many others and some maybe direct competitors are taking up the motor truck for delivery and distribution work. How can they know? Where can they get the information?

The motor truck salesman—now, it is to be hoped, of the past—has abused the confidence which prospective customers have placed in his word in many cases, and in sending in estimates has manipulated figures to the advantage of the trucks.

### Evasive Advertising

Not long since the writer sought operating figures in regard to motor trucks in certain service in one of our large cities, and was promised a complete account of results obtained with one local firm. Much ado was made over the great showing of the list of figures at last presented under the heading, "Actual Cost of Operating the ——— Truck," and ending with the statement referring to "the above figures, which show the actual cost of operating one of the ——— cars. These figures include everything but the insurance":

	February	March	April	May
Gas .....	\$21.30	\$23.79	\$24.16	\$20.00
Oil .....	2.36	3.32	2.80	3.32
Tire repair ..	2.60	3.00	2.60	7.35
Service ....	42.50	42.50	42.50	42.50
	\$68.75	\$72.61	\$72.06	\$72.97

Tire replacement, \$39.85  
Miles traveled, 4,731

The \$42.50 item is a maintenance guarantee, including garaging, washing, replacement of parts and use of extra truck when machine is laid up, on a 5-year contract.

Now, these figures are all well and good as far as they go, but to say that they include all but insurance is misleading. In costs should be included the following, of which insurance only has been mentioned by the agent:

	Per year	Per month
Interest on \$2,500 at 6 per cent per annum .....	\$150.00	\$12.50
Depreciation at 20 per cent per annum .....	500.00	41.67
License and tax .....	12.00	1.00
Insurance .....	200.00	16.67
Total .....	\$862.00	\$71.84

### Salesmen Should Be Able to Fully Advise Prospective Buyers

Adding this amount of fixed charges to the above monthly amounts, the monthly cost is seen to be in fact about two times what the agent quoted as being the "actual cost of operating except insurance." Instead of \$72.06 as the cost for April, the cost is more nearly \$143.90 for 4,731 miles, thus bringing the actual expense of the truck to \$5.53 per day, not counting the driver, which adds \$2.50 to this table of expenses.

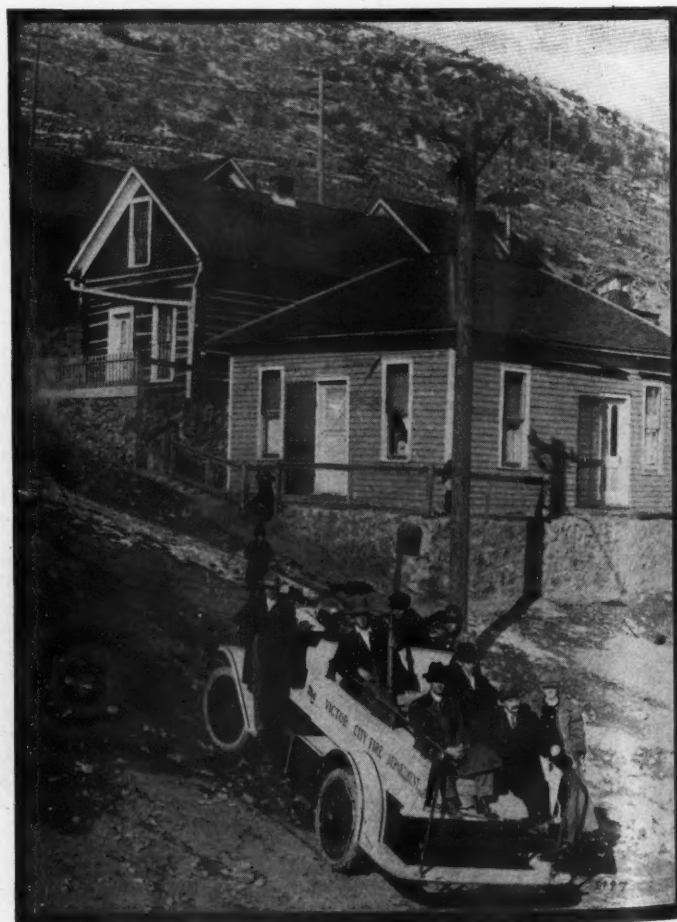
### Cost of Operating

Driver and all included, it costs the firm operating this truck \$8.03 for the day's work—26 days per month—yet at this the machine is making a fine showing and needs no excuses from the salesman for boosting of figures. A daily average of 45½ miles is shown for the machine, which at this works out to a cost of 18 cents per mile. This is better than any horse outfit can accomplish, for at a cost of \$6 per day, contract rate for teams which have a maximum daily mileage of 15, the cost per mile for a smaller load than the motor truck can carry is 40 cents. The truck, therefore, even under present conditions, shows a saving of 22 cents per mile over horse installations for a distance of 45½ miles, or \$10.01 per day, this with a load probably 20 per cent greater than the horses would draw.

It would seem that the salesman in this case had not grasped the sig-

nificance of the figures he had in hand rather than attempting to mislead in his report, and it is surprising how few of the salesmen who are attempting to handle motor trucks know the basic principles of truck operation or of cost figuring.

The first type of salesman to approach the prospective buyer is the touring-car type of agent, who has all the data concerning his machine at his tongue's end. He can tell you the advantages and disadvantages of worm gear or side-chain drive with all the volubility of a book agent; he can quote all authorities on every point of motor design which proves his machine the best. He does not know, perhaps, the body size of the machine, but he can tell you what load it will carry and all about how much overload it will carry and "not hurt it at all." Ask him about service and he is dumb. As to business methods and delivery systems he



VICTOR SHOWS HILL-CLIMBING ABILITY FOR FIRE CHIEFS



# Commercial Car



knows nothing. Talk of loading and unloading systems and he is entirely at sea. This man can only sell trucks to corner stores. When they have bought, too, the agent takes other territory and leaves the buyer to sink or swim by himself.

Second comes the man with a mass of figures of truck operation in other fields such as I have just been given, presenting a long list of what his make of machine is doing here and there. If the buyer be new at the game, he may fall for the talk. Many do, and for some classes of service where trucks are being put in it is sufficient.

"We are doing so and so with what's his-name," says the salesman. "Now, you buy one of our machines and do the same!" And the buyer thinks, as the salesman has said, that all he has to do is to buy a truck and put it to work.

## Not True Salesmanship

This type of salesmanship does not get orders from big jobs. His figures may be correct, though they are not always, but the fault in the system is that when the man has sold the truck the buyer is no further along toward the successful use of a motor truck than is a man learning to swim toward actual swimming who has just bought a bathing suit. It is not the truck that counts, or the bathing suit—each is a mere adjunct to the real business to be done. If the buyer fails to make his machine pay he blames the motor truck, but if a bather can't learn to swim he rarely blames his bathing suit.

The mass-of-figures type of salesman will fail to land an order with the up-to-date man who knows his business.

Finally appears a more businesslike type of man, who looks in the first place as though he had a degree of brains to apply to the question in hand. This man hardly mentions motor trucks, but starts off a line of questions which show at the start that he has had some knowledge of up-to-date method of handling goods. He knows correct routing, and proper systematizing, and hands out questions something like this:

- How many horse vehicles have you and what capacity and type?
- What are your average loads?
- What is the average length of a delivery route?
- What kind of loads do you have, package or bulk?
- What kinds of roads do you operate over?
- Is there necessity for extra heavy loads at times?
- Is speed an object in your delivery work?
- What is the average two-horse load in your territory?
- Are you thinking of motor trucks to increase business or to save money over horse equipment?
- How many stops do your wagons make per mile? How many on a day's run?
- Show me your routing maps.
- What is the nature of the stops made? Are

## FORWARDING BUSINESS REVOLUTION

*To buy a touring car is to boost good roads. The motor pleasure car has revolutionized the nation's idea of what a good highway is, and lifted road transportation to new possibilities.*

*To buy a motor truck is to promote a business revolution.*

*The motor delivery vehicle will revolutionize the business man's idea of what efficient service and traffic can be, and give to the local distribution of freight and commodities a higher standing than it has heretofore possessed.*

*As every touring car sold in the past has been but another unit of a vast influence toward bettered road conditions and efficiency in inter-city touring, so every motor truck being sold is but an added influence toward the betterment of conditions in delivery and hauling work at present far from ideal.*

*Delivery work has too long been considered an adjunct to business, a mere side line, and yet with methods of today service is on par with cost if not in advance of it as a business-getter. A great part of business service depends on the delivery system. It is time to take this part of the commercial system seriously, to work it out systematically and to eliminate all waste from its operation. The cost of distribution of products in our larger cities is a considerable item and yet old-fashioned, slipshod methods entailing long waits and many idle hours a day are still in vogue.*

*The greatest bugbear of the horse system is idle time made necessary by the rest periods demanded by the horse. This idleness of equipment induces idleness of the driver and so on to influence the whole system of goods handling; keeping down the mental standard of the men employed through lack of incentive to better efforts and hindering materially.*

*The motor truck stimulates the men handling it to a maximum effort. If they are not mentally advanced enough to appreciate and take advantage of the new condition they are eliminated and brighter men put in their places. Wages are increased to those who make good according to their increased earning capacity. The motor truck demands quick, effective and thoughtful effort to make it pay its best. This demand by the vehicle must be met by the men. Those satisfied with loose methods in delivery at present will in the future call for efficient system and the whole world of delivery work in all our cities will at once step up to a higher plane in business life, and receive the attention it has long deserved.*

*To buy a motor truck is to forward a business revolution.*

they long? Are they house to house or apartment? Are they to stores or factories?

Are conditions such that you can change the system to facilitate loading?

Can you hasten the unloading over the present time?

What is the labor situation in this territory?

Are drivers hard to get?

Is knowledge of delivery system now used important in drivers?

Are your present drivers intelligent enough to operate motor trucks?

Will the driver need a helper in unloading or in sorting packages?

These and a mass of other questions which strike deeper and more intimately into the business of the prospect as they proceed are asked by the new man, and the business man answers them because he feels that at last someone is on the job who is competent to handle his proposition.

Following the questions, the salesman goes out to verify the figures given him by the manager or prospect. First he checks up the horse equipment, and figures costs anew, generally finding that this system is costing far more per delivery than the business man has figured. In few cases does he find correct and complete cost figures on horse equipment.

Then follow trips with the wagons, checking up routes, sounding the ideas of drivers and other employees, poring over city maps and planning route changes to fit new conditions if motor trucks are put in.

"It would be foolish," says the salesman, "to throw away the horse equipment at this time and put in trucks entirely. Let's see where a truck will fit in best as a start, and with that beginning and the lessons learned there let the proposition grow, adding to the truck fleet as the indications of business and the loss of horses demand."

## Beginning to Talk Car

And so, after weeks of figuring, planning and study, all of which is greatly facilitated by the knowledge of the salesman obtained in similar work elsewhere, a plan is arrived at. Then and then only does the salesman begin to talk his car.

"Hauls here are short and in a congested district, so for that service my 1-ton electrics are just what you want," he is told; or, if he be a gasoline car salesman, after explaining about the electrics, he turns to another part of the system and says: "On this long haul of bulk loads you will need a 5-ton gasoline car." With this beginning he starts in where the other salesman began his argument, explaining what his particular make of truck has done in other places under almost similar conditions and perhaps obtaining letters from the users in corroboration of his statements. After this comes the detailed and mechanical description of



SAMPSON TRUCK WHICH DISPLACES SIXTEEN MULES

the truck, if wanted. The first man on the job selling trucks began his talk with this part.

In this case the truck firm, through the sales agent, has done the buyer—for he has bought a truck by now—a real service. It has shown him how to use his machine to make it pay, before selling it, and as a result, after it is in service and making good, the truck gets the credit, the firm gets reorders, and the agent—who spent so much time on the job that he probably lost money on the first sale—reaps a golden harvest from the unsolicited reorders later on. He has built on a solid foundation.

Firms furnishing this kind of salesmanship are working along the right lines.

The day of the transportation engineer is at hand, of the man with brains and the willingness to use them in working out real problems—not wasting his breath on promises, but marshaling facts for the prospect to base a sound judgment upon—and the man who is thinking of equipping with motor trucks for delivery work would do well to look him up.

Motor truck installation is no longer guesswork.

#### NEW KIND OF WATER WAGON

American municipalities have been comparatively slow in taking up motor truck apparatus in their street and sanitary engineering departments, primarily because the motor manufacturers have not in very recent years devoted attention to the development of body designs suitable for municipal service. In Europe the motor-driven road sprinkler, road-oiling machine and motor garbage wagons have been in service for several years and European municipalities have developed the use of motor truck apparatus to a high degree of efficiency. For instance, in Rouen, France, all street cleaning apparatus is of motor-driven type and economies as great as 150 per cent over former horse equipment are reported. In New York city, Commissioner Edwards is now experimenting with motor garbage carts and reports that the cost by former equipment was as much as 80 per

cent per ton of garbage removed, whereas the motor trucks have shown cost of but 23 per cent per ton.

The International Motor Co. has begun the developments of municipal apparatus and recently sold to the city of St. Louis a motor street sprinkler of unique design, built on a  $6\frac{1}{2}$ -ton standard Saurer chassis. The water tank has a capacity of 1400 gallons, or 231 cubic inches. It is double riveted longitudinal and transverse seams. The water tank is fitted with three baffle plates and four bilge angles so placed as to prevent any circular motion of water. The pump equipment consists of a Gould fire pump with a capacity of 400 gallons per minute against a pressure of 30 pounds of the pump circuit, and 10 to 12 pounds at the nozzle. The pump is geared at 400 revolutions per minute at a truck speed of 6 miles per hour which gives a water distribution of 1 gallon per 45 square feet.

Control of the sprinkler is effected by two levers, the first one throwing in and out of gear a jaw clutch operating the pump from a driving sprocket secured to a differential housing. Lever No. 2 oper-

ates on an inter-locking quadrant independently and together, the gate valves governing the two nozzles. The nozzles are easily adjusted to the full limit of useful nozzle pressure, in addition to an adjustment by a single ring nut which permits the throw of the water from the nozzles to be regulated for varying widths of streets. When the two gate valves leading to the nozzles are closed, pressure is obtained by an adjustable by-pass valve on a closed pump circuit. This pressure can be varied from 0 to 50 pounds pressure per square inch. The tank is equipped with a 10-foot hose, fitted with a standard hydrant connection at its end. This hose is connected to an automatic spring pressure check valve which permits the filling of the tank, and when full, automatically closes, thus necessitating no further attention from the operator other than that of disconnecting the hose from the hydrant. A ball float is fitted to the top of the tank, in addition to a small manhole, which permits the operator to judge the height of water in tank.

#### OILING MARYLAND ROADS

Roads in the various sections of Maryland are being kept in up-to-date condition by oil applications, which are distributed from a tank on a motor truck chassis. The combination is operated by the Standard Oil Co., and is the property of that company. The company also has several of these tanks operated on motor trucks in service in other sections of the country. The chassis of the truck was built by the Metzger Motor Car Co., while the tank, pipe work and sprinklers were arranged and put together by the Standard Oil Co. at its plant at Bayonne, N. J. The entire combination, excluding the chassis, was invented by George M. Saybolt, after whom it is named, and who is an employee of the Standard Oil Co. The machine is driven by a Hewitt 30-horsepower engine.

A three-cylinder Gould pump is used to force the oil through sprays in the rear of the tank at the bottom and injects the oil



NEW INTERNATIONAL MOTOR CO. SPRINKLING CART



into the surface of the road at an average of 100 pounds to the square yard. These sprays or spigots are arranged so that they can turn down toward the road and throw out as much or as little oil as is desired. The sprays can throw out a quantity of oil ranging from 1-6 to 1-3 gallon to the square yard, according to the amount needed on different sections of the road being treated. These oil applications keep the road dustless and at the same time cause the thoroughfares to retain their smooth covering.

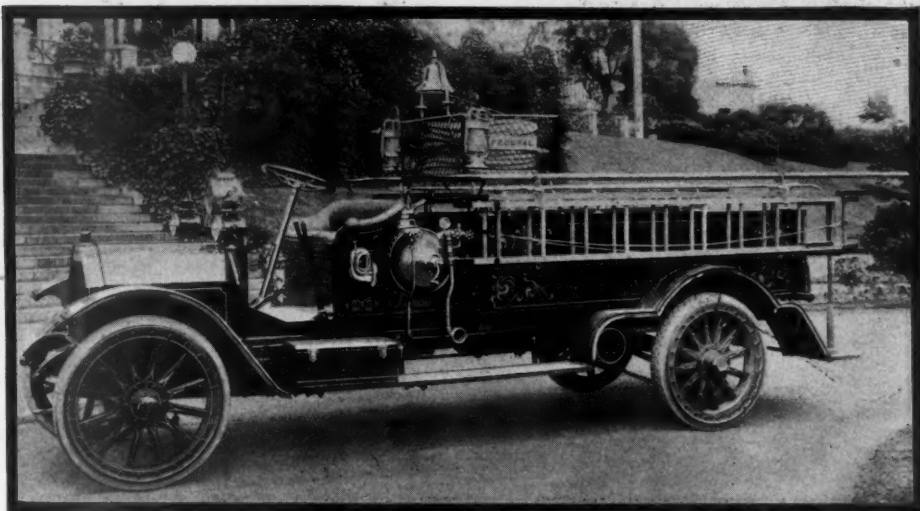
The vehicle used for this road oil treatment makes a speed varying from 2 to 12 miles an hour. The speed used depends upon the oil coating necessary at the different sections of the roads. As a general average, 7 miles of road of a width of 12 feet is given the treatment during a day. In addition to distributing the oil mechanically from the tank, the pump also pumps oil into the tank by means of a hose attached to the tank cars.

#### HOUSE-MOVING BY TRUCK

Every day sees new uses for the motor truck. The latest is house moving as practiced by the Krueger House Moving Co. of Chicago. This firm in a very enterprising manner uses a 6-ton Mogul truck to haul houses, first mounting the house on three heavy four-wheel trucks. When all is set, the Mogul is loaded to give it plenty of traction and hitched to the job. With this arrangement there is no difficulty in hauling the houses over hard roads, as Chicago is almost entirely level. Much better speed is obtained in this way than is possible with horse and windlass systems.

#### USES TRUCK FOR TOURING

One of the most unique vacation stunts reported this summer was that of Frank M. Miller of the Buick truck department, Chicago branch, who has proved that the two-cylinder Buick truck also is a pleasure car. Taking Mrs. Miller, his small daughter Dor-



FEDERAL MOTOR TRUCK CO.'S FIRE APPARATUS WAGON

othy and another family of three members, Mr. Miller hit the trail with a complete camping outfit. For 8 days this land cruising of the Buick with its party of six, flags fluttering in the breezes, and camping outfit indicating its plan, surprised and pleased the populace in the cities, country side and resorts of northern Indiana. In spite of rain, heat and bad roads, the trip was continued, and only twice were hotels sought for refuge. Everybody was delighted and wanted another week in this modern prairie schooner. The last day of the trip Mr. Miller drove the truck from Lafayette, Ind., the women and children of the party returning on the train.

#### BIG SAVING IN FERRY TOLLS

Owing to its ability to carry heavy loads over steep grades in much less time than horses, the 5-ton Peerless truck operated by the Howell Condensed Milk and Cream Co. of Jersey City, N. J. is reported to be saving its owners over \$3,000 a year in ferry tolls alone, in addition to all the usual savings that result from successful motor truck operation.

The company hauls every night a large quantity of milk from Jersey City to a point 2 miles in the interior of Staten Island. The truck makes two trips with 100 forty-quart cans each weighing 110. The present route covers a run of 8 miles from the distributing station at 144 Provost street, Jersey City to the Bergen Point ferry and a run of 2 miles after reaching Staten Island, making a round trip of 20 miles or 40 miles for the night's work. The ferry tolls that are charged against the company are 35 cents for each passage or \$1.40 per night.

It was impossible for the teams which formerly did the work to take this route because they could not cover the 10 miles over steep grades fast enough to deliver the milk on time. Two teams used to leave the distributing station and proceed via the Erie Railroad ferry to New York. The toll for this trip was \$1 for each team. Across Manhattan it was 1 mile to South Ferry, and the ferry toll from South Ferry to Staten Island was \$1.50 for each team. This amounted to \$10 per night for two round trips for two teams as against \$1.40 for the truck. As the truck works every night in the year the saving is \$3,139. The Howell company recently put the truck into double service working it night and day and besides saving these fees, has been doing excellent work.

#### ALBANY IN MARKET

Fire Chief Bridgeford of the Albany, N. Y. department is planning to purchase within a few months several motor tractors similar to the one now in use in the Schenectady, N. Y., department. Instead of purchasing new motor-driven fire apparatus, Chief Bridgeford figures that two tractors can be bought for the price of one motor wagon and these tractors could be used to draw to fires the present horse-driven chemical wagons and steamers. Chief Bridgeford intends to motorize the Albany department later on but for the present he believes the tractors ought to increase materially the efficiency of Albany's fire system.



MOGUL TRUCK THAT MOVES HOUSES



# Current Motor Car Patents



## PATENTS ISSUED JULY 23, 1912 (CONTINUED)

1,033,429—Vehicle Spring. Thomas J. Magner, Olean, N. Y.; George A. Larkin, administrator of said Magner, deceased. Filed October 12, 1910. Serial No. 586,778.

1,033,434—Spring Construction. McClellan McIntosh, Allegan, Mich., assignor of two-thirds to Frank A. Ewer and John T. Cloney, Allegan, Mich. Filed January 10, 1912. Serial No. 670,533.

1,033,443—Carbureter. Charles A. Morris and Walter H. Merritt, Red Bank, N. J. Filed March 27, 1911. Serial No. 617,058.

1,033,442—Steering Gear. VanZandt M. Moore, Cleveland, Ohio. Filed March 15, 1911. Serial No. 614,542.

1,033,449—Spark Plug. James E. Murray, Brooklyn, N. Y., assignor to Arthur R. Mosler, New York, N. Y. Filed February 23, 1907. Serial No. 358,803.

1,033,498—Spark Plug Tester. Joseph Valois, Alphonse Groise and Armand Groise, Holyoke, Mass. Filed February 9, 1912. Serial No. 676,523.

1,033,504—Internal Combustion Engine. Morris C. White and Otho C. C. Duryea, Los Angeles, Cal., assignors of one-tenth to James R. Townsend, Los Angeles, Cal. Filed October 20, 1908. Serial No. 458,705.

1,033,508—Apparatus for Controlling the Charge of Storage Batteries. Joseph L. Woodbridge, Philadelphia, Pa. Filed October 11, 1909.

1,033,511—Power Transmission for Motor Cars. Clinton Zimmerman, Worthington, Minn., assignor of one-third to Christ Zimmerman, Worthington, Minn. Filed April 6, 1911. Serial No. 619,391.

1,033,513—Vehicle Tire. Anton Aebli, Milwaukee, Wis. Filed October 6, 1909. Serial No. 521,319.

1,033,514—Rotary Engine. Isaac Alford, Peru, Kan. Filed November 15, 1911. Serial No. 660,477.

1,033,521—Variable Speed Driving Mechanism for Motor Cars. Henry G. Beguelin, St. Louis, Mo. Filed July 24, 1911. Serial No. 640,312.

1,033,556—Motor Truck. Frank H. Doane, San Francisco, Cal. Filed February 23, 1912. Serial No. 679,238.

1,033,560—Lighting System for Vehicles. Louis R. Duval, New York, N. Y., assignor of one-half to Giles C. Gardiner, Weehawken, N. Y., and Lucien Knapp, New York, N. Y. Filed June 1, 1910. Serial No. 564,385.

1,033,572—Signaling Device. Gustave Fortman, Philadelphia, Pa., assignor of one-half to George W. Cook, Philadelphia, Pa. Filed December 14, 1911. Serial No. 665,633.

1,033,599—Variable Speed Transmission Gearing. Charles M. Leech, Lima, Ohio. Filed July 19, 1911. Serial No. 639,328.

1,033,618—Transmission Gearing. Louis Renault, Billancourt, France. Filed July 20, 1910. Serial No. 572,842.

1,033,635—Tire. William LeRoy Sweeney, Spartansburg, S. C., assignor to Margaret S. M. Sweeney, Spartansburg, S. C. Filed November 7, 1911. Serial No. 659,011.

1,033,645—Spring Wheel. Alfred Strover Williams, London, England. Filed August 28, 1911. Serial No. 646,343.

1,033,657—Combined Spring and Shock Absorber for Vehicles. Julian Seay Bashaw, Gainesville, Fla. Filed April 11, 1912. Serial No. 690,079.

1,033,664—Elastic Wheel. Nestor Bralbant, Brussels, Belgium. Filed September 25, 1909. Serial No. 519,635.

1,033,665—Wheel. Nestor Bralbant, Brussels, Belgium. Filed November 21, 1910. Serial No. 593,536.

1,033,701—Rotary Explosion Engine. Gabriel Iochum, Paris, France, assignor of one-half to Leon Joseph Guitard, Paris, France. Filed October 30, 1911. Serial No. 657,625.

1,033,739—Vehicle Wheel. William C. Sellers, Carlsbad, N. Mex. Filed July 12, 1911. Serial No. 638,196.

1,033,741—Armored Tread for Pneumatic Tires. Bona Sims, Valley Springs, Texas. Filed February 8, 1911. Serial No. 607,325.

1,033,748—Rotary Explosion Engine. Edward K. Standish, Waltham, Mass. Filed November 9, 1907. Serial No. 401,402.

1,033,760—Internal Combustion Engine. George William Hutchinson, Walton, New Zealand. Filed April 9, 1912. Serial No. 689,673.

## PATENTS ISSUED JULY 30, 1912.

1,033,783—Gasoline Engine. Henry Collinet, Chicago, Ill. Filed August 6, 1909. Serial No. 511,610.

1,033,786—Magnet Battery Switch. Henry G. Cox, Detroit, Mich. Filed March 16, 1911. Serial No. 614,764.

1,033,886—Carbureter. William M. Gentle,

Greenwood, Ind. Filed December 1, 1910. Serial No. 595,137.

1,033,828—Compression Locking Grease Cup. Omer E. Risser and Peter E. McSweeney, Springfield, Mo. Filed October 18, 1910. Serial No. 587,731.

1,033,840—Magnetic Speedometer. John K. Stewart, Chicago, Ill. Filed May 13, 1911. Serial No. 627,069.

1,033,861—Acetylene Gas Lamp. Charles W. Beck, Rockville Center, N. Y., assignor, by mesne assignments, to Oxweld Acetylene Co., a corporation of West Virginia. Filed March 4, 1907. Serial No. 360,332.

1,033,862—Acetylene Gas Generator. Charles W. Beck, Rockville Center, N. Y., assignor, by mesne assignments, to Oxweld Acetylene Co., a corporation of West Virginia. Filed November 4, 1907. Serial No. 400,480.

1,033,863—Acetylene Gas Generator. Charles W. Beck, Rockville Center, N. Y., assignor, by mesne assignments, to Oxweld Acetylene Co., a corporation of West Virginia. Filed February 17, 1908. Serial No. 416,252.

1,033,864—Acetylene Generator. Charles W. Beck, Rockville Center, N. Y., assignor, by mesne assignments, to Oxweld Acetylene Co., a corporation of West Virginia. Original application filed October 23, 1901. Serial No. 79,626. Divided and this application filed December 22, 1908. Serial No. 468,830.

1,033,870—Shock Absorber. Ernest S. Bullard, Wheeling, W. Va. Filed August 4, 1911. Serial No. 642,397.

1,033,882—Automatic Starting Device for Internal Combustion Engines. John Desmond, Chicago, Ill., assignor to William S. Potwin, Chicago, Ill. Filed June 15, 1911. Serial No. 633,272.

1,033,886—Carbureter. William M. Gentle, Greenwood, Ind. Filed December 1, 1910. Serial No. 595,137.

1,033,900—Motor-Controlling Device. John T. Janette, Chicago, Ill. Filed November 7, 1910. Serial No. 590,968.

1,033,911—Explosion Engine. William S. Lee, Detroit, Mich. Filed January 26, 1911. Serial No. 604,724.

1,033,939—Internal Combustion Engine. William John Robb and Walter Henry Welch, Bristol, England, assignors to Banner Motors

Limited, Bristol, England. Filed April 30, 1910. Serial No. 558,661.

1,033,944—Vehicle Wheel. Thomas Henry Rushton, Grimsby, England. Filed September 16, 1911. Serial No. 649,686.

1,033,976—Agricultural Tractor. August E. Zock, Toledo, Ohio, assignor, by mesne assignments, to Archibald B. Creps, Maumee, Ohio. Filed May 23, 1908. Serial No. 434,613.

1,033,978—Automatic Starter for Motor Vehicles. Myron T. Baird, St. Louis, Mo. Filed May 27, 1911. Serial No. 629,830.

1,033,985—Rotary Motor. Levi W. Bucher, Washington, D. C. Filed November 6, 1911. Serial No. 658,818.

1,033,991—Variable Speed Driving Mechanism. Antonio Cotoli, Habana, Cuba. Filed September 18, 1911. Serial No. 649,779.

1,034,023—Shock Absorber. Thomas J. Mullen and Thomas F. Brennan, New Brighton, N. Y. Filed July 19, 1911. Serial No. 639,316.

1,034,046—Spring Wheel. George L. Webb, Spencer, N. C., assignor of one-half to Machael L. Kiser, Spencer, N. C. Filed September 27, 1911. Serial No. 651,659.

1,034,108—Device for Charging Storage Batteries. Edward A. Halbleib, Rochester, N. Y., assignor to Northeast Electric Co., Rochester, N. Y., a corporation. Filed May 9, 1910. Serial No. 560,387.

1,034,115—Recoil Check. William A. Johnson, Chicago, Ill. Filed March 18, 1911. Serial No. 615,212.

1,034,125—Rear End Buffer for Motor Cars. Moise J. Leclerc and William Schmitt, New York, N. Y., assignors to said Leclerc and Frederick W. Darnstaedt, New York, N. Y. Filed September 14, 1910. Serial No. 582,016.

1,034,133—Rotary Engine. William McDonald, Swansea, England. Filed February 7, 1912. Serial No. 676,140.

1,034,145—Gearing. Arthur E. Reuss, Cincinnati, and Oscar Schnitzler, Remington, Ohio. Filed May 1, 1911. Serial No. 624,294.

1,034,146—Gearing. Arthur E. Reuss, Cincinnati, and Oscar Schnitzler, Remington, Ohio. Filed May 17, 1911. Serial No. 627,805.

1,034,156—Storage Battery. Edward Sokal, Chicago, Ill. Filed July 2, 1909. Serial No. 505,571.

1,034,157—Storage Battery. Edward Sokal, Chicago, Ill. Filed July 2, 1909. Serial No. 505,572.

1,034,186—Garment. Samuel E. Badanes, Flushing, N. Y. Filed December 29, 1910. Serial No. 599,917.

1,034,190—Tachometer. William H. Bristol, Waterbury, Conn., assignor to the Bristol Co., Waterbury, Conn., a corporation of Connecticut. Filed May 20, 1912. Serial No. 698,367.

1,034,204—Purifier for Acetylene Gas. Albert B. Cobb, Waterbury, Conn. Filed May 4, 1912. Serial No. 695,164.

1,034,213—Rotary Internal Combustion Engine. Raymond S. Dickinson, Los Angeles, Cal. Filed September 8, 1911. Serial No. 648,299.

1,034,220—Spring Wheel. Arthur Weed Drummond and Austin Dwight Davenport, Gustine, Cal. Filed September 13, 1911. Serial No. 649,094.

1,034,231—Shock Absorber. Philip Edward Haugh, Millvale, Pa. Filed February 16, 1912. Serial No. 678,034.

1,034,271—Vehicle Wheel. Andrew McKillop, Allegheny, Cal., assignor of one-fourth to Francis Bordner De Launey, Allegheny, Cal. Filed July 25, 1911. Serial No. 640,491.

1,034,273—Gasoline Spray or Vaporizer Valve. John T. Metcalfe and Garfield Metcalfe, Quincy, Pa., assignors to Quincy Engine Co., Quincy, Pa., a corporation of Pennsylvania. Filed March 31, 1911. Serial No. 618,148.

1,034,274—Gas Engine Starter. George E. Miller, Oakland, Cal. Filed November 9, 1911. Serial No. 659,331.

1,034,280—Curtain for Vehicle Tops. William T. Murray, Baldwin, Kan. Filed November 9, 1910. Serial No. 591,484.

1,034,317—Pneumatic Wheel. Albert Herman Smith, Topton, Pa. Filed October 11, 1911. Serial No. 653,982.

1,034,325—Starting Device for Engines. John W. Tudor, Boston, Mass. Filed March 14, 1910. Serial No. 549,181.

1,034,327—Resilient Wheel. Martin Wagner, Raymond, Minn. Filed March 29, 1912. Serial No. 687,060.

1,034,349—Transmission Gearing. John Eckhard, Boston, Mass., assignor to Hercules Motor Truck Co., Boston, Mass., a corporation of Massachusetts. Filed October 21, 1910. Serial No. 588,237.

1,034,372—Apparatus for Making Tires. Charles H. Semple, Trenton, N. J. Filed March 7, 1911. Serial No. 612,812.

1,034,378—Motor Car Wheel and Axle. Charles Henry Willard, Pasadena, Cal., as-

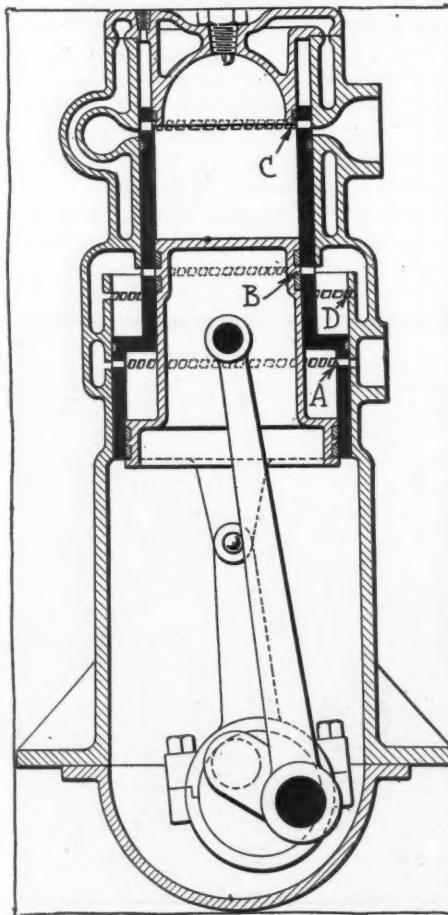


FIG. 1—SLEEVE-VALVE TWO-CYCLE MOTOR



signor of one-half to Dora Rowley, Gila Bend, Arizona. Filed February 11, 1911. Serial No. 607,996.

1,034,382—Vehicle Wheel. Charles Whitfield Barrett, San Jose, Cal. Filed July 8, 1911. Serial No. 637,445.

1,034,385—Detachable Rim for Carriage Wheels. Louis Jean Claude Guillaume Dehais, Paris, France. Filed June 20, 1908. Serial No. 639,609.

1,034,390—Vehicle Wheel. McClellan McIntosh, Allegan, Mich., assignor of one-fourth to John T. Cloney, and one-fourth to Charles N. McDuffie, Allegan, Mich. Filed May 10, 1911. Serial No. 626,391.

1,034,401—Vehicle Spring. Henry Sterling Chapin, Rockville Center, N. Y. Filed September 11, 1911. Serial No. 648,744.

Reissue: 13,450—Starter for Internal Combustion Engines. Luther V. Moulton and Palmer A. Jones, Grand Rapids, Mich. Filed December 2, 1911. Serial No. 663,876. Original No. 1,004,061, dated September 26, 1911. Serial No. 393,671.

**Transmission-Gearing.** No. 1,034,349—John Eckhart, Boston, Mass., assignor to Hercules Motor Truck Co., Boston, Mass. Filed October 21, 1910, dated July 30, 1912. Comprising a selective-type sliding gearset incorporated with a differential and jackshaft, this change-gear consists of a driving shaft mounted with a brake, and provided with a master gear which drives a counter shaft, which is provided with gears of various sizes, selectively meshing with corresponding reduction gears on the driveshaft by means of two shifter shafts, incorporating with shifter yokes and rings on the drive shaft, with connections to a manually-operated lever. A brake linkage is arranged to automatically set the brake, preventing spinning of the gears at the time of changing gears. This consists of an actuating arm connected to the brake band, which is controlled by lugs on the shifter rods, any movement of which applies the brake, holding it in application until its movement has been completed, and the gear actuated by the shifter rod in mesh. A bevel gear differential gear is driven by the driveshaft, which in turn drives the divided jackshafts, the whole device, including the brake, change-gear and differential being enclosed in one case.

**Internal Combustion Engine.**—No. 1,033,911—William S. Lee, Detroit, Mich. Filed January 26, 1911, dated July 30, 1912. Combining a two-stroke action with a

sleeve-valve port system, this motor is of the double-bore type, having a cylinder of two superimposed bores, lined with a sliding sleeve of the same shape, and a piston of the same form, reciprocating within the sleeve, as in Fig. 1. The two chambers thus divided are respectively a combustion chamber and an auxiliary compression pump. The combustion chamber is provided with a true dome head, in the center of which is the spark plug, the casting being separate from the cylinder body, and cored for the reception of the upper portion of the sleeve and for water jackets.

Cast integrally with the cylinder are water jackets and exhaust passages, provided with slots communicating with the interior of the combustion chamber, above the stroke of the piston. Corresponding slots are cut in the sleeve.

At the center of the stroke of the enlarged portion of the piston are intake passages communicating with the interior of the compression pump through registration with corresponding slots in the sleeve, and connected with the intake manifold. At the top are like ports which admit the gas when compressed to like ports at the bottom of the stroke of the piston proper, which form the inlet valves. The cylinder is connected to the crankshaft by the customary crank and connecting rod action, and the sleeve is operated by an eccentric on the crankshaft which is operated a connecting rod, pinned to the lower portion of the sleeve.

In operation, starting at top dead center, and with a compressed charge in the cylinder, the piston is driven downward by the ignition of the charge by the spark-plug. On the down stroke the sleeve is moved to a point where the intake ports A are opened, and the gases from the carburetor are drawn into the pump by the down stroke of the piston. At the bottom of the stroke these ports are closed and the inlet ports B and exhaust ports C opened by the continued reciprocation of the sleeve, the exhaust gases escaping

through the upper ports, being further impelled by the inrush of gas from the inlet ports, under pressure from the corresponding compression in the pump of the mate to the cylinder. The new charge is then compressed in the combustion chamber by the up stroke of the piston, the exhaust ports being closed, and the raw gas in the pump being compressed by the corresponding upstroke of the enlarged end of the piston, the pump exhaust ports D, admitting gas to the adjacent cylinder.

**Internal Combustion Motor.**—No. 1,033,939—William John Robb and Walter Henry Welch, Bristol, Eng., assignors to the Banner Motors, Ltd., Bristol, Eng. Filed April 30, 1910, dated July 30, 1912. This is a four-cylinder motor, the cylinders of which are set approximately on the four corners of a square, being of the four-stroke type, with valves in the head, and provided with pistons and connecting rods, the latter of which do not connect with the crankshaft. Running longitudinally of the motor, equidistant from the two pairs of cylinders, is a stationary shaft, upon which two walking beams rock. These walking beams are connected at their ends with one each of the connecting rods of the pairs of cylinders, at an angle of 180 degrees. To the center of one side of each walking beam are pivoted other connecting rods which connect in turn with the cranks of a two throw crankshaft.

**Magnetic Speedometer.**—No. 1,033,840—John K. Stewart, Chicago, Ill. Filed May 13, 1911, dated July 30, 1912. In conjunction with a magnetic speedometer of the familiar revolving magnet type, this invention relates mainly to a thermostatic compensator. This consists of constructing the magnetic pole-piece in the form of a split ring, composed of two metals of unequal expansive properties, so linked as to vary the relation between the pole-pieces, for the purpose of correcting the reading as affected by changes in size due to expansion and contraction as induced by changes in temperature.

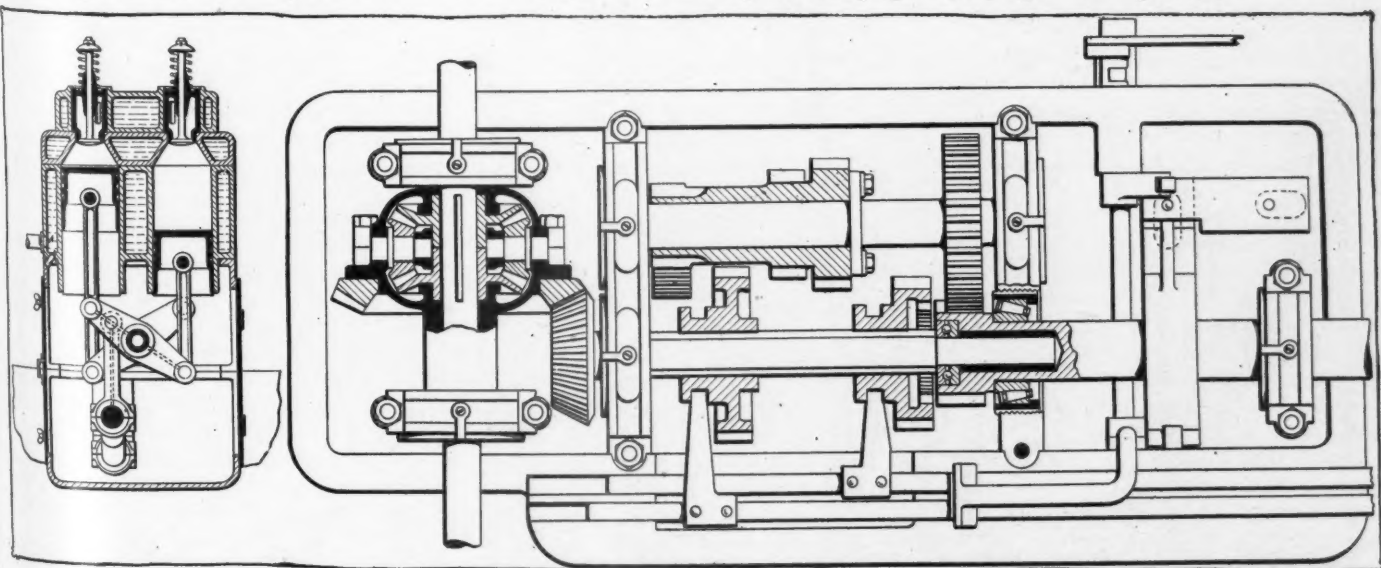


FIG. 2—BRITISH WALKING BEAM MOTOR AND HERCULES GEARSET



# From the Four Winds



R. C. H. TESTERS PLOW THROUGH SAND

**CADILLAC in Long Race**—The 1913 Cadillac was the first car to be entered in the Los Angeles-Phoenix road race. To Don Lee belongs the honor of putting the first entrance fee in the hands of John S. Mitchell.

**Changed to a Sociability Run**—The annual run of the Automobile Manufacturers' and Dealers' Association of St. Louis is to be a sociability event instead of a reliability. Owners will be invited to join the party on the tour, which probably will be August 22, 23 and 24. The route will likely be from St. Louis to Moberly and return.

**Ontario League Growing**—The Ontario Motor League of Canada is organizing for a provincial educational campaign for good roads. During the past year the membership of this organization is increasing at the rate of 40 per cent, and it is expected that 2,000 motorists will have enrolled before the expiration of the present season.

**Change in New York Tags**—License number plates issued by New York state next year will be different than those now being used. Besides the figures "1913," indicating the year in which they are issued, the new plates will have the word "commercial" on plates intended for commercial motor vehicles. The state's charge for a commercial license is \$5, while from \$5 to \$25 is charged for pleasure vehicles, according to horsepower of machine. Heretofore owners are said to have secured pleasure plates at commercial car rates, thereby saving many dol-

lars. Manufacturers' plates used by dealers will continue to bear the letter "M." The 1913 contract calls for a supply of 90,500 pairs of license number plates.

**Penn Busy Building Roads**—One thousand miles of highway built since the state began its present road improvement system will be what Pennsylvania can show as the progress in highway work made by the Keystone state at the end of this year.

**Cincinnati Chosen**—The invitation extended by the mayor and the Commercial Association of the city of Cincinnati to the American Road Builders' Association to hold its ninth annual convention in that city has been accepted. The convention and the good roads congress, which is always held in connection with the convention, will therefore be held in Music hall, Cincinnati, December 3, 4, 5 and 6. This convention will bring together the leading road builders of United States and Canada.

**Want Money for Roads**—Members of the Indianapolis city council have been asked by the board of park commissioners to increase the tax levy for park and boulevard purposes from 7 to 9 cents on each \$100, in order to hasten the completion of the board's boulevard scheme. The increase would amount to about \$120,000 a year. The boulevard scheme outlined by the board includes about 200 miles of paved driveways, mostly along the stream banks of the city. One scheme now under way is widening Thirty-eighth street for a distance of 3 miles to a uni-

form width of 100 feet. This will cost about \$500,000. About half of the work on Thirty-eighth street is now under way.

**Would Use Motor Sprinklers**—The city authorities of Indianapolis have under consideration the adoption of motor equipment in the street cleaning department, to include several motor-driven sweepers and sprinklers. Owing to the large amount of improved streets, the street cleaning is becoming a serious problem, considering the limited amount of money at hand. Experiments have recently been made with a motor sweeper with fairly satisfactory results. Concerns manufacturing such apparatus are being communicated with by the board of public works.

**Ultimation by Uncle Sam**—Rural mail delivery service has been temporarily suspended in a portion of York township, near York, because of the unsafe condition of the road which route No. 12 from the York office traverses. Postmaster S. S. Lewis, of York, Pa., has been advised by Fourth Assistant Postmaster General P. V. DeGraw that the rural service of this section of the county be discontinued, and steps will be taken by the department to permanently discontinue the service in all sections of the county where the highways are not kept in repair for travel.

**Rochester Wants Parking Square**—Rochester, N. Y., business men are trying to arouse official action in the matter of providing for motorists a public parking place for cars, or they declare the city ought to secure a block of property in the downtown section of Rochester, pave it with asphalt and in the center of the block form a lawn or miniature park with cars to be ranged along each side. The protest is a direct outgrowth of the recent ordinance enacted at Rochester forbidding motorists to leave their cars standing in busy streets or in front of offices for more than 10 or 15 minutes, 5 minutes being the limit in the busiest sections.

**Slowing Milwaukee Motorists**—To stop speeding on the famous Blue Mound road, running westerly from Milwaukee and the principal western exit from the city, the Milwaukee county board of supervisors has adopted a resolution making a speed limit of 20 miles per hour on all roads in the county, excepting within the limits of cities and villages. The county ordinance is claimed to be illegal by well-versed attorneys, who point out that the state law fixing the limit of speed on country highways at 25 miles per hour cannot be superseded by any local enactment whatever. The law states specifically that no unit of the government may enact any ordinance or law which interferes with the state law on this question.



It is expected that the Milwaukee Automobile Club will invite test suits. Its clubhouse is situated on the Blue Mound road.

**Minnesotans on Run**—The St. Cloud Automobile Club, of St. Cloud, Minn., had a reliability run August 7-8, spending the night at Glenwood and returning through Alexandria and the lake park region of Minnesota. Short stops were made at Cold Spring and Richmond, arriving at Paynesville and running over to Lake Koronia for luncheon. In the afternoon stops were made at Brooten and Belgrade. The second day stops were made at Osakis and Sauk Center, Melrose and St. Joe.

**Long Tour Completed**—Dr. S. S. Crow and A. Faulkner, of Los Angeles, have just completed a motor car trip from that city to New York. The two men took the trip as a vacation in Dr. Crow's 48-horse-power Pierce-Arrow runabout. They made no attempt to establish any records, but stopped at several places for visits with friends and relatives and for sightseeing. They left Los Angeles on June 5 and arrived in New York on July 8. Of this time they spent 17 days on the road.

**Portland-Seattle Record Broken**—First captured by George Johnson with a Mitchell, then won by R. P. Rice, with a Ford, again taken with a Ford by Leonard McClure, all three victors being of Seattle, the Chanslor & Lyon trophy bid a fond farewell to Seattle during the past week and became the temporary property of W. C. Baldwin, of Tacoma. Baldwin left Portland at 4:15 a. m. and arrived in Seattle at 11:49, having knocked just 41 minutes off the schedule.

**Wisconsin Road Report**—Incomplete reports received by the Wisconsin Highway Commission from counties throughout the state show that \$2,150,000 will be expended for highway improvement of a permanent nature during 1913. The state aid law requires all counties to make reports for the following year's work by September 1, in order to draw state aid. During 1912 approximately \$1,000,000 is being expended, and this amount is regarded as immense when it is considered that 1912 is the first year of the operation of the state aid law, which appropriates \$300,000 state aid annually.

**Wisconsin Registrations**—The total registration of motor cars in Wisconsin on July 31, 1912, was 21,194, not including 959 licenses issued to dealers. The total receipts of the registration department of the secretary of state's office were \$124,303, which includes 3,178 motor cycle licenses at \$2 each. Motor car registration is made at the rate of \$5 each. The cost of administration was \$18,750.67, leaving a balance of \$105,552.23. Of this amount, 75 per cent, or \$79,164.25, is returned pro rata to the various counties in Wisconsin, and the remaining 25 per cent, or \$26,388.08, is placed into the good roads or state aid for highway improve-

ment fund. Milwaukee county will profit most, receiving \$17,420.82 of the 75 per cent return distribution.

**Club Working on Road**—The Burlington Automobile Association of Wisconsin has elected these officers: President, Benjamin Holmes; vice-president, Dr. W. A. Fulton; secretary, C. E. Partee; treasurer, Dr. F. Meinhardt; director, Henry Wehmhoff. The association has decided to take up highway improvement of its own accord and appropriated \$1,000 for the work. A team of horses and two men are now going over all of the roads leading out of Burlington, for a distance of 5 miles, to rake loose stones from the roadway, fill chuck holes and line up approaches to bridges and culverts.

**Defendants Must Appear**—Judge Bruce, of the Malden, Mass., district court, has read a lecture to the police of that city for assuming to tell motorists arrested for speeding that they could enter an appearance through their attorneys, instead of appearing themselves and plead *nolo contendere*. The men so notified were ordered to appear before the judge so that he could hear what they had to say, as he believes that in making them come into a court of justice the seriousness of their offense will be impressed upon them more forcibly and they may be more careful in future.

**Blue Books for President Taft**—It is not likely that President Taft will be lost during his numerous motor car trips around the country. Last week he was presented with a full set of Blue Book routes by LeRoy Mark, vice-president of the southeastern division of the Touring Club of America, President Taft being an honorary member of the organization. The president informed Mr. Mark he would turn the books over to his son, Charlie, who takes a great interest in motor car touring, and the president will depend upon his judgment in laying out some interesting trips. President Taft in-

formed Mr. Mark he had found the 1911 Blue Book routes of much value and that the 1912 editions would be carried in the White House motor cars whenever he was making a tour.

**Bars Ex-Convicts as Chauffeurs**—In his next annual report, Secretary of State Lazansky, of New York, will suggest that ex-convicts be barred from securing licenses to drive motor cars, as several crimes have resulted by the chauffeur's co-operation with criminals.

**Park Still Closed**—Despite the requests of several California congressmen that motor cars be allowed in Yosemite park this year, Secretary of the Interior Fisher has ordered that motor cars be not allowed in the park. The action was taken because the superintendent of the park reported that it would be dangerous for cars to use the narrow and deep roads.

**Woman Building Roads**—Miss Eva Cressy, daughter of Walter Cressy, a Gloucester, Mass., contractor, enjoys the distinction of being the only woman road builder in New England. Miss Cressy has just had completed, under her direction, one of the finest pieces of highways in the Bay state. She has been on the job every day in all kinds of weather, directing the work of thirty-five men while her father has been absent.

**Buffalo Counts Cars**—Statistics just issued by the bureau of engineering of Buffalo, N. Y., show that at the corner of Main and Tupper streets, which corner has the greatest traffic in Buffalo, 4,451 motor cars and motor trucks each day passed this corner during the month of June, while during the same time 1,262 horse-drawn vehicles passed the same point. During the month of June 2 years ago at the same corner the average number of motor cars passing every day was 2,247, while 1,353 horse-drawn vehicles were checked up daily at this busy corner, which figures indicate the increasing popularity of the motor in Buffalo.



J. J. HOBERG'S PRIZE-WINNING PIERCE IN GREEN BAY, WIS., PARADE



# Among the Makers and Dealers



NEW FACTORY OF GRAMM-BERNSTEIN CO. AT LIMA, O.

**NYBERG Gives a Banquet**—To celebrate the return of the Nyberg truck from the four-state tour, a banquet was given the employees of the Nyberg company at Anderson, Ind.

**Add to Stock**—Increases in the capital stock of two Detroit concerns were recorded during the past week. The capital stock of the Detroit Body Co. was increased from \$1,000 to \$1,000,000, while that of the Wolverine Motor Supplies Co. was raised from \$25,000 to \$50,000.

**Anderson Makes a Change**—R. C. Anderson, vice-president of the J. I. Case Plow Co., of Racine, Wis., has resigned to assume the position of general manager of the reorganized Simms Magneto Co., of New York. Mr. Anderson has been associated with the Racine concern for many years.

**Keeton Invades Canada**—The Keeton Motor Co., of Detroit, Mich., announces the formation of the Keeton Motors, Ltd., of Canada, with headquarters and factory at Brantford, Ontario. The Keeton Motors, Ltd., is incorporated at \$200,000 all paid up and has secured a plant at Brantford, Ont., with 30,000 square feet of floor space. It will manufacture 350 cars for this season's requirements, taking care of the Canadian, English, and colonial business. The officers of the company are: F. M. Keeton, president; J. B. Detweller, of the Canadian Steel Co., vice-president and treasurer; W. G. Houck, vice-president and sales director; E. Sweet, of Brantford, secretary. W. J. Verity, president of the Verity Plow Co., and Percy E. Verity, also of the Verity Plow Co., are large stockholders and di-

rectors. The company will manufacture a six-cylinder 48-horsepower French-type car, following the Renault lines.

**Unique Underslung Demonstration**—An accompanying illustration shows the display used by the St. Louis agents of the American Motors Co., of Indianapolis, to demonstrate just how far the American underslung can be tipped without turning turtle. The car as it stands is tilted to an angle of 55 degrees. In placing this car in the position shown, it was raised to an angle of 60 degrees and still did not turn turtle, it is declared.

**To Make Foreign Machine**—The Sheboygan Machine Co., recently organized by former associates of the Falls Machine Co., of Sheboygan Falls, Wis., has been granted the American rights to the manufacture of a bronzing machine patented in Germany. The latest model of the machine has been received at Sheboygan and will serve as the pattern for the large number of machines which the new company intends to build for the American trade.

**Starting New Engine Company**—The Leech Automobile Co., of Lima, O., which was incorporated 3 years ago for the purpose of carrying on experiments with a new style of gasoline engine, is now ready to erect a plant for the manufacture of the engine. In the past 3 years the concern has secured patents on fifteen different devices. The capitalization has been fixed at \$100,000. The officers of the company are Charles M. Leech, president; H. H. Hughes, vice-president; Frank Leech, secretary; A. M. Kelchner, treasurer, and H. W. Allen, general manager. In addition to manufacturing engines, the

company will also make a line of parts for motor cars and commercial vehicles. It is believed the plant will be located at Lima.

**Swinehart Has a Picnic**—The Swinehart Tire and Rubber Co., of Akron, O., gave its annual outing to its employees at Cedar Point, August 3. A special train carried thousands of employees to the point.

**Making the Shur-Go Self-Starter**—Announcement has been made by the Shur-Go Starter Co. that it has purchased the patents and equipment required in the manufacture of starters, and contemplates the manufacture of the device in New York. It is stated by the company that deliveries will be made by September 1. The officers of the new organization are: James E. Taylor, president; W. G. Rand, vice-president and general manager, and E. Chamberlain, secretary and treasurer.

**Hawkeyes Ready for Show**—Iowa's big summer motor show is only 2 weeks away. The show, which is to be one of the features of the Iowa state fair, will be held the last week in August under the great steel amphitheater at the fair grounds at Des Moines. The space has been entirely sold for weeks, and the biggest show in the history of the state fair is expected. W. E. Moyer, president of the Des Moines Dealers' Association, who is one of the managers of the state fair show, has been dangerously ill the past 2 weeks with typhoid fever, but his associates have carried on the work preliminary to the opening of the show.

**To Call Them Studebakers**—The Studebaker Corporation of Detroit has sent notice to its dealers all over the country that, in the future, all the motor cars built at its Detroit plants will be known as Studebaker cars. The change went into effect with the opening of the current month. A big battery of machine tools is now engaged in turning out the initial lot of 100,000 Studebaker script radiator name plates which will replace those at present in use, not only on the cars now being marketed, but also on all cars sold by the Studebakers and their predecessors, the E-M-F Co., which was merged into the Studebaker Corporation some time ago. As soon as it is possible to supply the monograms to Studebaker dealers, all cars now in use will be equipped with them. The change is declared to be logical. Since the beginning of the motor plants around which the present Studebaker system has been built, members of the Studebaker family have been heavy stockholders. Two years ago they acquired a controlling interest. The motor plants are now owned outright by the Studebaker Corporation. Practically



all the cars built there have been sold through the Studebaker branches and Studebaker policies have dominated the firm for the past 2 years.

**More Shops for Overland**—About \$45,000 worth of new improvements were started at the Willys-Overland plant at Toledo last week. Permits were issued for a new blacksmith shop, one story high, 201 feet long and 70 feet wide, to cost \$25,000, and an addition to the repair shop to cost \$19,600.

**Kenosha Bidding**—The Kenosha Industrial Association, of Kenosha, Wis., is negotiating with the United States Tire Co. for the location of its proposed new tire and rubber plant, which will have an output of between 500,000 and 750,000 tires annually. The United States Tire Co. is looking for a location in a small city near Chicago, and if the Kenosha association can offer sufficient inducements the location is promised.

**Packard Adds New Engineers**—The engineering forces of the Packard Motor Car Co. have been added to, J. G. Vincent having resigned as assistant engineer to Howard Coffin of the Hudson company to take an engineering position with the former concern. Russell Huff has been made consulting engineer and C. J. Moore manufacturing engineer of the Packard company. These two men, together with Mr. Vincent, will form an advisory board, which will have general supervision of the engineering affairs of the company.

**R. C. H. Entering Canada**—Owing to the large Canadian trade which it has already developed, the manufacturers of R. C. H. cars are said to be seriously considering the establishment of a Canadian branch factory in Walkerville or at Windsor. It is said that some of the details already have been looked into and if the decision is favorable work will start on the Canadian factory at once. This factory will probably be largely in the nature of an assembling plant, and the Canadian and export trade will all be handled from the dominion side of the line.

**Gramm Pushing New Buildings**—The Gramm-Bernstein Co. of Lima, O., announces that its new plant is almost completed. The roofs are of tile, the lighting facilities are extraordinarily good, both natural and artificial; the comfort of the workmen has been looked after, the floors being of wood, and special attention given to sanitary conditions, and the handling of materials. The plant, with the exception of one building, is one-story; the ceilings are high, the supports being structural steel, and are from 50 to 63 feet wide; no posts are to be found in any part of the plant; the buildings run 316 feet long; the stack is of brick, 125 feet high. The factory is located along the main lines of the Pennsylvania and D. T. and I., side tracks running in for the convenience of quick shipments. The plant is also nicely situated, being within four

blocks of the main part of the city, the real estate itself being very valuable. The machinery will be installed the coming month, and the factory will be in full operation by October 1.

**Packard's Big Shipments**—The Packard Motor Car Co. in the 2 weeks ending July 31, shipped 255 cars whose total value was \$1,275,000, cars leaving the factory at the rate of twenty a day. Fifty-six trucks were sent out in the same time, their value being \$196,000.

**Increasing Aluminum Plant**—The American Castings Co., of Mishawaka, Ind., has just installed new equipment, including moulding machinery, pneumatic tools and other apparatus. It is also erecting an addition to its plant and has taken on a number of men in the mechanical department. The company manufactures aluminum castings.

**Plan to Show at Fair**—Dealers in Columbus, O., and some of the manufacturers of both pleasure cars and motor trucks are preparing to have a large exhibit at the Ohio state fair and Columbus centennial celebration, which will be combined and will take place August 26 to 31. At the Ohio state fair in 1911 the motor display was especially large and results secured were very gratifying. It is believed a large number of cars will be on display at the coming fair.

**Akron Day Carded**—One of the features of the international rubber and allied trades exposition which will be held in New York city September 23 to October 3, inclusive, will be Akron day, which will be devoted exclusively to exploiting the rubber industries of Akron, O. All of the leading rubber manufacturers of Akron will be represented upon that day by a special display. Some of the Akron concerns plan to send several hundreds of their employees to the show to study the various methods of manufacturing

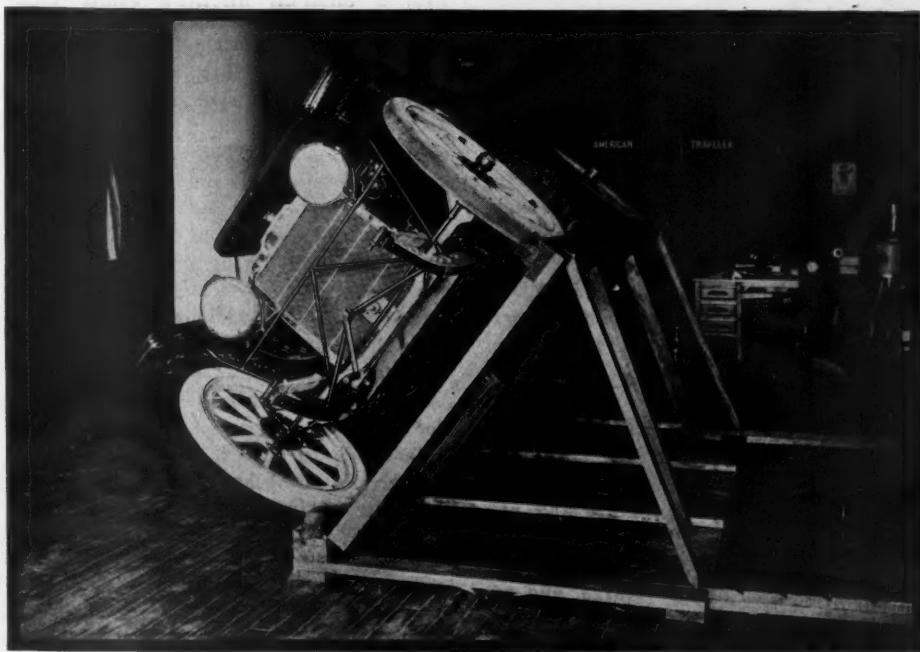
and machinery used. The exposition is to be given under the auspices of the rubber-producing countries of the world, manufacturers, makers of machinery and allied trades.

**Considering La Crosse**—W. L. Tust, of Dubuque, Ia., president of a new independent oil company, has been inspecting sites at La Crosse, Wis., for the \$25,000 plant which the company proposes to establish. The new concern looks with favor upon La Crosse and it is taken as a certainty that the headquarters will be established here.

**Atlanta Talking Show**—The success of the November show of the Atlanta Automobile Association is assured, it is declared. The show dates—November 16 to 23—are the best that could possibly be arranged for Atlanta, for at that time the weather is at its best. November has been declared by scientists to be the best month in the year.

**Addition to Rambler Plant**—Nine acres of ground adjoining the present holdings have been purchased by the Thomas B. Jeffery Co., manufacturing Rambler cars, at Kenosha, Wis., to provide for future extensions. The increased output planned for 1913 will necessitate several enlargements, which will be made in the course of the coming six months.

**United States Tire Co. Moves**—The general offices of the United States Tire Co. have been moved to the new United States Rubber building, Broadway and Fifty-eighth street, New York. The building is twenty stories high. The United States Tire Co. will occupy the basement and sub-basement as a stock room; the ground floor for its New York branch and the fifteenth, sixteenth and seventeenth floors as general offices. The company has over 400 employees in its general offices. The New York branch store will be moved into the new quarters soon.



AMERICAN DEMONSTRATION OF UNDERSLUNG PRINCIPLES

# Development Briefs in Accessory Field

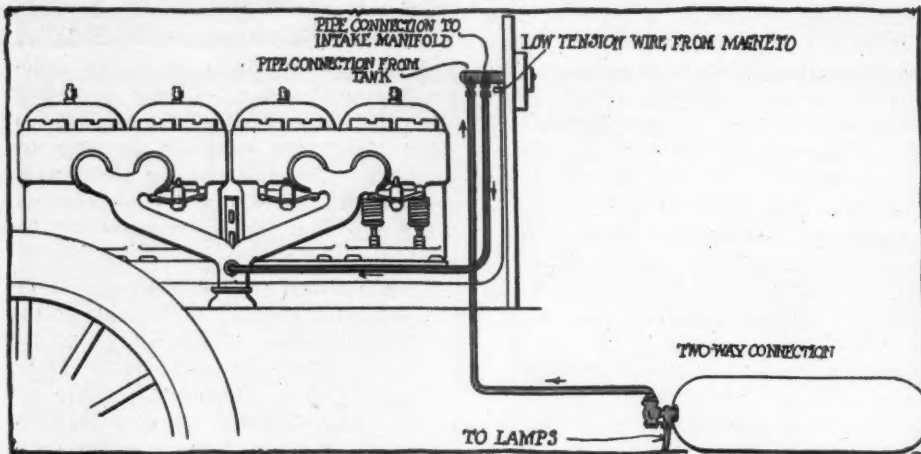


FIG. 1—COMBINATIONS OF THE BLITZEN ENGINE-STARTER

## Taximeter Cash Register

**T**AXIMETERS that automatically print and hand out a slip showing the fare is the invention of Walter Lewin, a California man. The device is known as the Columbia taximeter, and is being marketed by the Columbia Taximeter Co., San Francisco, Cal.

The instrument is entirely automatic, and no reading is possible save from a printed ticket, similar to a cash register receipt, which is presented the passenger at the end of the ride. The machine is simple in construction, being built in two units, viz., the registering device and the recording device. The registering unit is controlled only by the tariff lever, every movement of which leaves a printed record on a duplicate tape, and discharges a ticket through a small chute. The record is accessible only to the proper authorities, showing time, distance, and fare due. The machine may be made to record single tariff, double tariff, and on the \$3.50 and \$4.00 per hour basis.

The duplicate ticket device contains two rollers, one for the blank ticket and duplicate strips, and the other for the duplicate record. The figures to be printed are in relief type on the registering wheels, the blank strips and ribbon being stretched parallel to them and brought into contact at the movement of the tariff lever, by a set of blank hammers. A facsimile of the ticket discharged appears herewith, the passenger pays what appears as the total fare, and an accurate and unalterable record is retained as a check on the chauffeur's honesty.

The entire device is enclosed and is extremely simple, with no delicate parts. The only controls are the tariff handle and the dating knobs. An accurate and unalterable record is thus kept of the cab's performance, showing plainly the time consumed in trips, empty returns, and on stand; the number of productive and unproductive miles traveled; and the correct total of fares received. This protects the

owner of the cab, and the printed receipt protects the patron, and raises the chauffeur above suspicion. The meter is driven by the customary flexible shaft.

## Bayne Sleeve-Valve Motor

External sleeves are the feature of the Bayne valve mechanism. The valves are located in side pockets on either side of the cylinder, similar to the T-head type

H M		
3	45	Time—Cab Dismissed
3	20	Time—Cab Hired
1	29 12	Date—Month, Day, Year
MILES TRAVLD.		
6 6 5	2/5	Mileage—Cab Dismissed
6 6 0		Mileage—Cab Hired
TOTAL FARE		
0 3 0 0		Amt. to be Collected
0 0 4 0		Initial Fare

FIG. 2—SAMPLE RECEIPT FROM TAXIMETER

of motor, except that the pockets are shorter and wider, permitting a dome-shaped cylinder head, whose advantages are well known. The water jacket is situated between the sleeve and the cylinder wall, and is enclosed in an outside hood, to which the manifolds are bolted. Unlike the Knight engine, it employs but one sleeve, made of seamless drawn pipe, turned to  $\frac{1}{8}$ -inch thickness, and actuated by a cam and rocker mechanism, on a half-time cam-shaft, instead of by an auxiliary crank-shaft, as are the Knight sleeves.

Referring to Fig. 4, showing a section through the crankshaft and cylinder, D is the sliding valve, sliding in space B, outside of the cylinder casting proper C, and slotted on the right for the inlet and on the left for the exhaust. This sleeve is actuated by the levers J and E, which are acted on by the eccentric I. The lever E rocks on a bearing at E, and is jointed to

## Taximeter Which Gives Fare Receipt—Blitzen Single-Sleeve-Valve Motor

J at its opposite extremity, which in turn is coupled to the sleeve. A roller on lever E is pressed against cam I by a heavy coiled spring. The shape of the cam is such that on the exhaust stroke the sleeve is raised until the exhaust slot comes opposite the exhaust port in the cylinder, and during the suction stroke, it is dropped until the inlet slot registers with the inlet port, and holding the sleeve midway between these positions during the compression and combustion strokes.

Due to the generous size and relatively slow action of the spring, there should be no lag in its action, and consequent faulty timing, as with the springs of poppet valves. The outside location of the sleeve offers the advantages of improved cooling, of both cylinder and valves, a minimum of friction, and the elimination of uneven expansion and contraction of parts within the cylinder. The design shows simplicity and accessibility, all

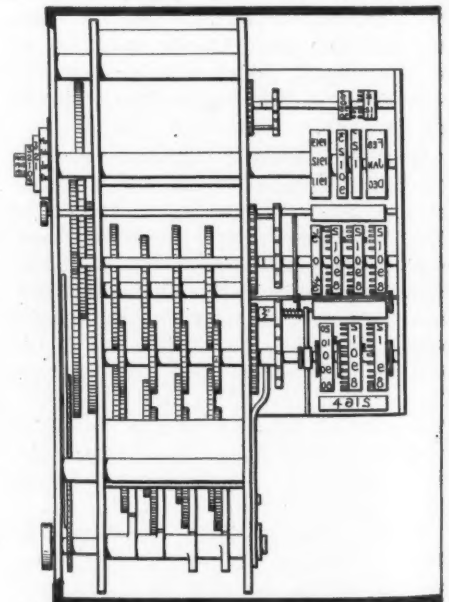


FIG. 3—MECHANISM OF TAXIMETER

working parts being completely enclosed and lubricated. John Bayne, of Wheeling W. Va., is the inventor.

## Blitzen Self Starter

In Fig. 1 is illustrated the Blitzen starter which is of the manifold type, drawing in a charge of acetylene gas on the dying revolutions of the motor, and starting on the spark. It is one of the simplest starters that has yet appeared, consisting of two lines of tubing, one leading from the gas tank to a small starter handle on the dash, the other, from thence to the manifold; and a short-circuiting wire to the low-tension wire of the mag-



# Novelties for Use of the Motoring Public

## Improved Steam Vulcanizer— Two-Point Spark Plugs— New Exhaust Horn

neto. In operation, the engine, when stopped is short-circuited by a turn of the starter handle, and a charge of gas is drawn into the engine through the manifold pipe on its dying revolutions. In starting, the battery switch is closed, and the engine starts as on compression. There is nothing in sight except the small brass starter handle, and no moving parts. Failure to start can only result from poor gas or faulty ignition.

### Lodge Spark Plug

Marburg Brothers, of New York, are importing the Lodge spark plug of English manufacture. These are made in both single and double-pole type. With double-pole plugs connected in series with standard plugs of any make it is stated that a two-point ignition may be obtained by means of the standard Mea magneto.

### Improved Steam Vulcanizer

An improved steam vulcanizer is being featured by the Meili-Blumberg Co., New Holstein, Wis., the principal features of which consist of an attached sliding hinge clamp and a solid pad, instead of the usual air-bag. The clamps are made of a stiffer metal than the ordinary malleable type, and it is claimed that they are superior for this reason. They are permanently attached to the frame of the plant, and because of this fact and their convenient sliding and hinged features, they should save much time where time is most valuable. The solid pad is also a good feature, as there is no tiresome pumping up of pressure to be done, and there is no danger of bursting, with resultant ruin of the job. The boilers are tested to 150 pounds pressure, and it is claimed that they generate very quickly.

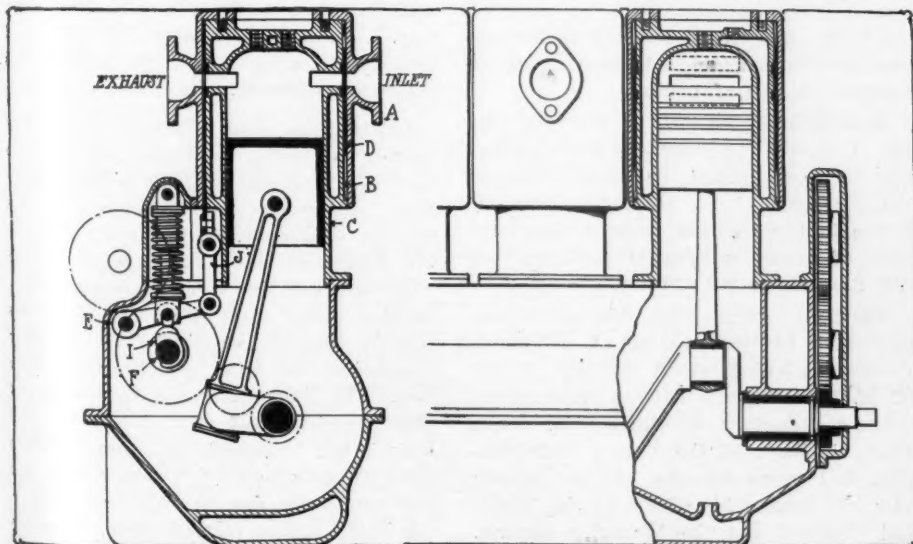


FIG. 4—CONSTRUCTION OF BAYNE SLEEVE-VALVE MOTOR

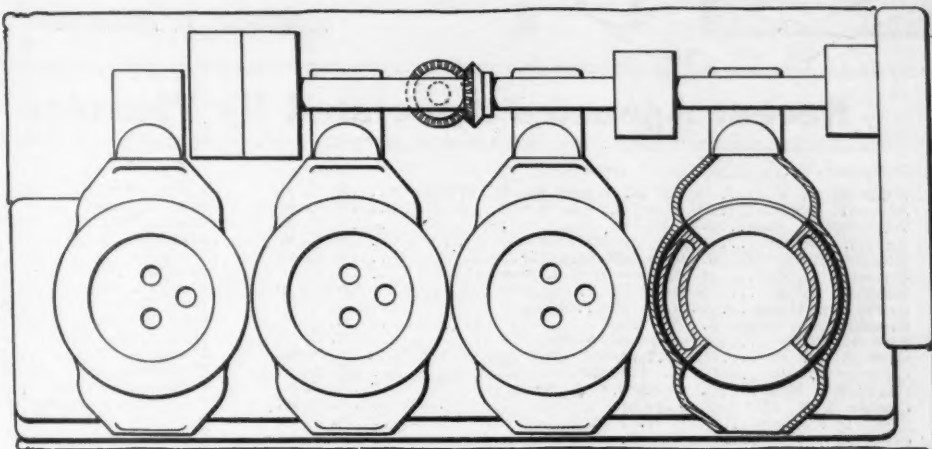


FIG. 5—PLAN VIEW OF BAYNE ENGINE

These plants appear in two models, known as BB and EE. The former of which has a capacity of ten tubes at a time, and five casings, while the latter can

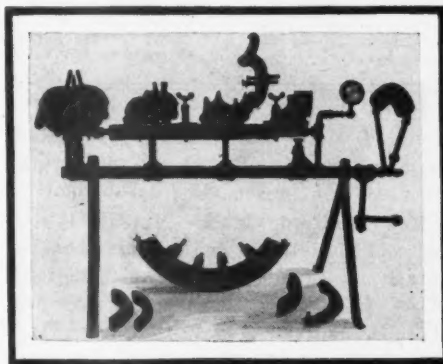


FIG. 6—MEILI-BLUMBERG VULCANIZER

accommodate one casing and one tube at a time.

### New Exhaust Horn

Latest among motor car signals is the exhaust horn recently designed by A. Williamson, Atlantic, Iowa. Its chief feature is that the gas pressure from the

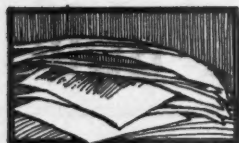
exhaust is made uniform so that a continuous uniform sound may be produced by the horn and the same result is accomplished when the engine is running slow or high speed. The feature of the device consists of a storage tank 30 inches long and 6 inches in diameter which acts as a pressure equalizer to give the continuous blast. The tank is not intended to enable the operator to blow the horn when the engine is not running but merely to equalize the gas pressure.

### High-Grade Brake Lining

Multibestes is the name of a brake-lining manufactured by the Standard Woven Fabric Co., of Worcester, Mass. It is composed of woven asbestos, interwoven with brass wires, and is so woven on special looms that there are no threads or layers. It is treated with an original compound, which completely saturates and impregnates every interstice of the material. It is put through a special process to provide a perfectly true and even surface and thickness, and is said to take hold gently but with a steady, even pressure that is very positive. It is said to be heat, water, dust and oilproof and to possess great wearing qualities. It is said to be non-glazing and easily machined. It is adaptable not only as a brake lining, but may also be used as a clutch facing.

### Green's Acetylene Condenser

One of the frequent causes of trouble with acetylene lights is the carrying over of water from generator or tank to the burners. This results in flickering lights and choked tubes. The Alexander Motor Supply Co., San Francisco, is marketing an arrangement called Green's condenser and light intensifier which is designed to be interposed between generator and tank or gasoline piping to remove the water and other impurities from the gas and at the same time act to a certain extent as a pressure regulator. It is made in two different forms, one for attachment to the generator and the other to gas storage tanks.



# Brief Business Announcements



## Recent Agencies Appointed by Pleasure Car Manufacturers

Town—	Agent	Make	Town	Agent	Make
Albany, N. Y.	James N. Kemp Mach. Works.	R. C. H.	Lynn, Mass.	C. E. Whitten	R. C. H.
Almont, Mich.	Charles B. Scully	R. C. H.	McCool, Ind.	Robbins & Johnson	R. C. H.
Atchinson, Kan.	George E. King	R. C. H.	Macon, Ga.	Macon Garage Co.	Moon
Bessie, Okla.	Bessie Mercantile Co.	R. C. H.	Milbank, S. D.	Farley Auto Co.	R. C. H.
Bloomington, Ill.	J. E. Hatfield	R. C. H.	Minerva, O.	Minerva Hdw. Mfg. Co.	R. C. H.
Booneville, Mo.	H. E. Sombert & Son	R. C. H.	Moline, Ill.	Ferdinand Crosby	Velle
Boston, Mass.	Roberts & Sherborne	American	Morgan, Minn.	George H. Thompson	R. C. H.
Brockton, Mass.	William F. Holmes	R. C. H.	New Orleans, La.	H. A. Testard	Hudson
Brookhaven, Miss.	J. W. Day	R. C. H.	New Richm'd, Wis.	Bell & Webster	R. C. H.
Buffalo, N. Y.	A. Judson Wells	R. C. H.	New Ulm, Minn.	Meuller & Aab	R. C. H.
Buffalo, N. Y.	Barrett Motor Car Co.	Paige	Peotone, Ill.	Henry Koenning	R. C. H.
California, Mo.	O. E. Houser	R. C. H.	Pittsburg, Pa.	James Jepson	R. C. H.
Caseville, Mich.	C. Crawford & Son	R. C. H.	Pittsfield, Mass.	Louis L. Larrouche	R. C. H.
Center City, Minn.	G. Lorens	R. C. H.	Pleasanton, Kan.	Arthur L. Thomas	R. C. H.
Chagrin Falls, O.	Carl W. Patch	R. C. H.	Pomona, Cal.	T. Clark	R. C. H.
Chicago	Hustis Brothers	Borland	Plymouth, Pa.	Frank Martz	R. C. H.
Chicago	A. Vincent & Son Co.	R. C. H.	Red Lake Falls, Minn.	Findelsen Auto Co.	R. C. H.
Chicago	John Rehm	R. C. H.	Richmond, Va.	W. C. Smith & Co.	R. C. H.
Cleveland, O.	Eiseman Automobile Co.	Apperson	Rosenberg, Tex.	Rosenberg Motor Car Co.	Moon
Cleveland, O.	Western Reserve Motor Car Co.	Standard electric	Salem, Va.	M. L. Shanks	R. C. H.
Crown Point, Ind.	Meeker & Claussen	R. C. H.	Salem, Mass.	Motor Sales and Service Co.	R. C. H.
Colo. Springs, Col.	Russel Gate Mercantile Co.	R. C. H.	Seattle, Wash.	W. A. Wicks	Franklin
Des Moines, Ia.	Independent Auto Co.	Locomobile	Seattle, Wash.	Olympic Motor Car Co.	Detroit
Des Moines, Ia.	George F. Lichty	Petrel	Shreveport, La.	Bennett Auto Supply Co.	Moon
Fort Plains, N. Y.	Philip Marsh	R. C. H.	Shreveport, La.	Orme Motor and Transfer Co.	R. C. H.
Fort Wayne, Ind.	Randall Motor Car Co.	R. C. H.	St. Clair, Pa.	S. H. Daddow	R. C. H.
Greencastle, Pa.	Petrie & Morganthall	R. C. H.	St. Louis, Mo.	Cochrane Motor Sales Co.	Cartecar
Hugo, Okla.	George W. Chandler	R. C. H.	Watertown, N. Y.	Wolf Auto Co.	R. C. H.
Kansas City, Kan.	A. A. Garnier	R. C. H.	Webb City, Mo.	M. H. Wood & Co.	R. C. H.
LeSueur Cr., Minn.	Louis Prchal	R. C. H.	West Chester, Pa.	George J. Moses	R. C. H.
Lumberton, Miss.	Hinton & Byrd	R. C. H.	Wheaton, Ill.	E. M. Ferry	R. C. H.

**PLAISTOW, N. H.**—The garage built for J. W. Peaslee at Plaistow, N. H., has just been finished.

**Methuen, Mass.**—The garage built for Philip Le Page on Lowell street, was opened for business last week.

**Cleveland, O.**—W. H. Atkinson, of the Windermere garage, 13560 Euclid avenue, has closed for the agency of the Sanford truck.

**Philadelphia, Pa.**—In addition to maintaining a shop at 1331 Mount Vernon street, George Meeley has established a tire sales office at 702 North Broad street.

**Dallas, Tex.**—The Studebaker Automobile Dealers of Texas have organized with the following officers: B. C. Nettles, Waco, president; A. P. Mitchell, Ft. Worth, secretary and treasurer; H. C. Mosehart, Houston; R. C. Flick, Cuero, and J. W. Collins, San Antonio, trustees. The stated object of this organization is that the Studebaker dealers of Texas may co-operate for the further distribution of the cars in the state.

**Detroit, Mich.**—H. L. Keats, formerly with the Chalmers company, has just been allotted the last large territory of the Briggs-Detroit Co., with headquarters at Portland, Oregon. The Briggs-Detroit concern is also extending its field to South America, a number of representatives on that continent being already chosen. The Brazil territory has recently been closed with Stephen Schaefer of Rio de Janeiro, who will be known as manufacturer's representative. Gilbert Livingston, formerly connected with the Cleveland sales branch of the

Packard Motor Car Co., has been made assistant to Mr. Briggs of the Briggs-Detroit Co. in the sales department.

**New Bedford, Mass.**—Murray O'Neil has sold his interest in the Knickerbocker garage on County street, New Bedford, Mass., to Mark E. Sullivan, of the firm of J. B. Sullivan & Son.

**Syracuse, N. Y.**—Ferd Crosby, who now owns the garage at South State and Cedar streets formerly occupied by the Kerr-Doane Motor Co., and the American Sales Motor Co., is to build a three-story addition to the structure, installing an elevator of 10 tons capacity.

**Syracuse, N. Y.**—Arthur E. Wheeler, formerly employed by the Franklin Automobile Co., has opened a garage and salesroom in the building formerly occupied by A. M. Zimbrich. He will handle the Stoddard-Dayton and Haynes pleasure cars and a line of trucks.

**New Orleans, La.**—H. A. Testard, who for 7 years has handled the Cadillac line in New Orleans, has now taken on the Hudson and on account of the increase in business has made a long term lease of a new building at the corner of 353 Baronne to 901-915 Perdido street.

**Hartford, Conn.**—The Stevens-Duryea line will be represented at Hartford, Conn., beginning about October 1, by H. M. Parsons, who will go there direct from the factory at Springfield, Mass. Fred W. Dart, of the Palace Auto Station, has given up the Thomas agency and will confine his efforts to the E-M-F and Flanders and the Waverley electric. George D. Knox at 210 Pearl street, has

discontinued his agency for the Hudson and will give all his time to the Peerless and the Broc electric.

**Syracuse, N. Y.**—The James Automobile Co., of which Fred Benson is manager, has taken the agency of the Little Four.

**Sanford, Me.**—Charles Lord, who has taken on the agency at Sanford, Me., for the Peerless, Pope-Hartford, Stevens-Duryea, Chalmers and Paige-Detroit cars, has opened salesrooms and a service station on Mechanic street.

**Indianapolis, Ind.**—After 4 years with the Indianapolis sales branch of the Buick Motor Co., L. H. Conde has resigned to become associated with R. H. Losey, general sales manager of the Republic Motor Car Co., with headquarters in New York city. Mr. Losey formerly was identified as general manager with the Indianapolis Buick sales branch.

**Indianapolis, Ind.**—Capitol avenue is rapidly becoming a motor row, due to Carl G. Fisher having built several handsome salesrooms and garages on this avenue. These buildings are all of modern structure. Nine buildings have been built and another is under construction. Sixteen motor firms are housed on this row in Fisher's buildings besides other companies that have structures of their own. The National branch there has just been remodeled and refinished. The total floor space occupied by these sixteen firms amounts to 180,000 square feet. Six tire companies are on this row occupying 53,000 square feet of space. One top company, one carburetor factory, one



battery factory, and several agencies for carbureters, speedometers, shock absorbers, magnetos, self-starters, etc., have offices along this avenue.

**Worcester, Mass.**—The executors of the Thomas Tracey estate have been granted permission to build a garage on a part of the property on Mayfield street.

**Hudson, N. Y.**—The Warren Street Garage Co. has incorporated with capital of \$3,000, directors being John T. and Henry B. Hester and Dennis Hester, Jr.

**St. Louis, Mo.**—The Detroit Electric Car Co. has been formed in St. Louis to take over the business of the branch, which has been discontinued. W. F. Siegmund, former branch manager, is at the head of the new concern which is located at 5191 Delmar boulevard.

**South Bend, Ind.**—V. E. Paxson, S. W. Nicholson and J. C. Paxson have organized the South Bend Auto Body Co. here, and a factory will be established immediately for the manufacture of motor car parts and bodies. The concern has been incorporated with an authorized capitalization of \$20,000.

**Dallas, Tex.**—G. A. C. Halff, of San Antonio, former manager for the Standard-Dayton Automobile Co. in Texas, announces the organization of a company to handle the Chalmers, Flanders electric, Mack, Sauer and Federal trucks, operating under the name of the Halff company. Headquarters for Texas have been established at Dallas.

**Indianapolis, Ind.**—The Indianapolis sales and Indiana distributing branch of the Diamond Tire Co. has moved to 431-433 North Capitol avenue, Motor Row, Indianapolis. A new three-story building has also been completed at Capitol avenue and Michigan streets, and has been occupied by the sales branch of the Goodyear Tire Co.; the Carl Fisher Co., which has the agency for the Stutz and

Packard; the Archey-Atkins Co., distributor of the Pierce-Arrow, Detroit electric and Hudson and the Ideal Motor Car Co.

**Cleveland, O.**—The Eiseman Automobile Co., 2025 Euclid avenue, distributor for the Imperial, has taken the agency for this district of the Apperson.

**Center City, Minn.**—G. Lorens has closed a contract with the White Bear Auto Co., St. Paul, to handle the R. C. H. cars in the southern half of Chicago county.

**Philadelphia, Pa.**—J. G. Satterthwaite has been appointed manager of the Whiting Motor Co., of New York, local Mercer distributor, northwest corner of Broad and Green streets.

**San Francisco, Cal.**—T. J. Beaudet, former Cadillac racing driver, has abandoned racing to take the position of mechanical superintendent of the San Francisco agency of the Cadillac.

**Syracuse, N. Y.**—Frank P. Anderson, Syracuse agent for Hupmobile cars, has removed to his new quarters at 600 Salina street, taking the garage formerly occupied by the Joseph J. McCarthy Taxicab Co.

**Indianapolis, Ind.**—The Goodyear Tire and Rubber Co. has employed James T. Kennedy of Indianapolis in its truck tire sales department and has assigned Mr. Kennedy territory including Indiana, Pennsylvania, Kentucky and Tennessee. Mr. Kennedy will make his headquarters at Akron, O.

**Detroit, Mich.**—A. H. Brown has been made branch manager for the entire northwest territory for the Studebaker Corporation and will hereafter be located at Portland, Ore. He formerly represented the company at Spokane, Wash. C. W. Hartman, branch manager for the Studebaker Corporation at Dallas, Texas, has had his territory extended somewhat. A subsidiary distributing point to this

branch has been opened at San Antonio, of which Hartman is in charge.

**Asbury Grove, Mass.**—A new garage is being erected near the old depot grounds for John Mason.

**Cleveland, O.**—The A. W. Hall Automobile Co., 6119 Euclid avenue, has been organized to handle the Hatfield truck here.

**Lancaster, N. H.**—The owners of the Mansion house, one of the large hotels at Lancaster, are building a big garage to accommodate touring parties visiting that section.

**Toledo, O.**—The Willys-Overland Automobile Co., of Toledo, Ohio, has filed papers with the secretary of state, increasing its capital stock from \$6,000,000 to \$15,000,000.

**Lansing, Mich.**—L. Clyde Smith, assistant to the director of advertising of General Motors Co., Detroit, has been appointed advertising manager of the Olds Motor Works.

**Syracuse, N. Y.**—The J. I. Case Threshing Machine Co. plans to erect a modern garage and distributing depot within the next 12 months that will make Syracuse the central distributing point for the entire state instead of merely central New York for the Case.

**Toledo, O.**—Extensive improvements are being planned by C. B. Sage and H. P. Hall, the new managers of the Standard garage at Toledo. A large amount of additional space will be added, and a department will be established to meet the requirements of tourists.

**Toledo, O.**—The W. H. McIntyre Co. of Toledo has been incorporated by W. H. McIntyre, William Vollmayer, Frank Carabin, Edward Laskey and Frank Kelly. The concern, which is capitalized at \$10,000, will take over the business of the United Motor Co., of which McIntyre has been manager for several years. The

**Brooklyn, N. Y.**—Penn Auto Co., capital stock, \$5,000; incorporators, Louis J. Wendell, Harry C. Partridge, Morris Wolf.

**Buffalo, N. Y.**—Mutual Motor Car Co., capital stock, \$125,000; to manufacture motors; incorporators A. Poppenberg, F. C. Carter, O. E. Yeager.

**Camden, N. J.**—Garrison Gasoline Engine Specialties Co., capital stock, \$125,000; to manufacture devices for engines, motor cars, etc.; incorporators, F. A. Kuntz, F. S. Saurman, F. S. Muzzey.

**Camden, N. J.**—Service Motor Truck Co., capital stock, \$50,000; general motor car business; incorporators, R. L. Smith, C. D. Hackett, E. J. Eldridge.

**Cincinnati, O.**—Swing Wheel Co., capital stock, \$50,000; to manufacture motor car wheels; incorporators, A. J. Swing, Richard E. Werner, Rupert H. Landale, C. A. Bickett, Richard A. Bickett.

**Cincinnati, O.**—Victor Auto Parts Co., capital stock, \$20,000; to sell motor cars, motorcycles and carriage accessories; incorporators, William J. Corcoran, Edward E. Corcoran, John L. Corcoran, Harvey R. Corcoran, H. R. Kerans.

**Cincinnati, O.**—Oil Industrial Co., capital stock, \$10,000; to deal in oils, greases and belt dressings of all kinds; incorporators, E. G. Holden, John C. Rogers, Earl H. Passel, George C. Schmidt, Jr., E. R. Heisel.

**Cleveland, O.**—Knox Rubber and Supply Co., capital stock, \$10,000; to manufacture and sell rubber goods; incorporators, R. A. Lang, C. S. Wachner, H. H. Burton, A. S. Dale, P. F. Blaine.

## Recent Incorporations

**Columbia, S. C.**—Consolidated Auto Co., capital stock, \$5,000; to sell motor cars and supplies; incorporators, J. B. Roddey, John J. Cain, J. P. Matthews.

**Detroit, Mich.**—Michigan Motor Specialties Co., capital stock, \$20,000; to manufacture motor car devices; stockholders, Nellie M. Beck, Charles W. Beck, Charles Wright, Jr.

**Detroit, Mich.**—Hercules Motor Truck Selling Co., capital stock, \$50,000; stockholders, Angus Smith, James O. Murfin, W. F. Webb.

**Hudson, N. Y.**—Warren Street Garage Co., capital stock, \$6,000; incorporators, John F. Hester, Henry B. Hester, Dennis Hester.

**Jamesburg, N. Y.**—Ex-Cel Motor Truck Co., capital stock, \$250,000; general motor car business; incorporators, T. C. Corwin, A. Englehart, A. K. Kelley.

**Nashville, Tenn.**—City Taxicab Co., capital stock, \$3,500; incorporators, E. D. Dakin, T. O. Perkins, J. D. Andrews, W. V. Andrews, F. M. Swann.

**Newark, N. J.**—Barlow's Electric Garage Co., capital stock, \$20,000; incorporators, W. W. Scofield, D. A. Barlow, William T. Benjamin.

**New York**—Wadsworth Garage, Inc., cap-

ital stock, \$9,000; incorporators, William Daly, Albert C. Christian, George A. Boyd.

**New York**—McGraw Tire and Rubber Co., capital stock, \$100,000; to manufacture and deal in tires and rubber goods.

**Paterson, N. J.**—Paterson and New York Motor Express Co., capital stock, \$50,000; general transfer and express business; incorporators, J. M. Simpson, M. Brooks, H. Smith.

**Philadelphia, Pa.**—L-M-S Motor Co., capital stock, \$10,000; to manufacture motors, etc.; incorporators, H. Cohen, Emil Adler, J. J. Baker.

**Pittsburgh, Pa.**—Pittsburgh Motor Service Corporation, capital stock, \$60,000.

**Reno, Nev.**—Mack Auto Co., capital stock, \$50,000; incorporators, M. J. Mack, E. D. Mack.

**Seattle, Wash.**—Dahl Punctureless Tire Co., capital stock, \$60,000.

**Trenton, N. J.**—M. and M. Tire Co., capital stock, \$20,000; incorporators, William McGinnis, Edgar W. Cresse, Walter A. Wood.

**Washington, D. C.**—Automobile Engineering College, Inc., capital stock, \$5,000; instruction to chauffeurs; incorporators, Frank N. Justice, Garfield H. Street, Edgar L. Turner, Thomas W. Smithfield.

**Wilmington, Del.**—Wallace Automobile Co., capital stock, \$300,000; incorporators, Clarence Jacobs, S. E. Roberson.

**Wilmington, Del.**—Protective Auto League, Inc., capital stock, \$1,000,000; incorporators, Isaac Fogg, George D. Hopkins, George W. Dillman.

**Wilmington, Del.**—Wallace Automobile Co., capital stock, \$300,000.

company will retain the location at the corner of Madison avenue and Tenth street.

**Boston, Mass.**—W. E. Taylor, sales manager of the Lansden Electric Motor Co., of Boston, has leased salesrooms at 242 Columbus avenue.

**Boston, Mass.**—The Lexington company of New England has leased the building on Northampton street, Boston, formerly occupied by the Premier branch as a service station, the former company using it for the same purpose.

**Bridgewater, Mass.**—Because additions were being made to the Bassett garage at Bridgewater, Mass., and that the owner was one of the stockholders in the Lenox Automobile Co., of Boston, there was some talk of having the Lenox cars assembled at the Bridgewater plant.

Mr. Bassett says this will not be done, as he needs all the room for his general garage business.

**Boston, Mass.**—H. M. Groff has been sent to Boston to take charge of the New England branch of the Paige-Detroit car. He will make his headquarters in Boston at the local agency on Hereford street.

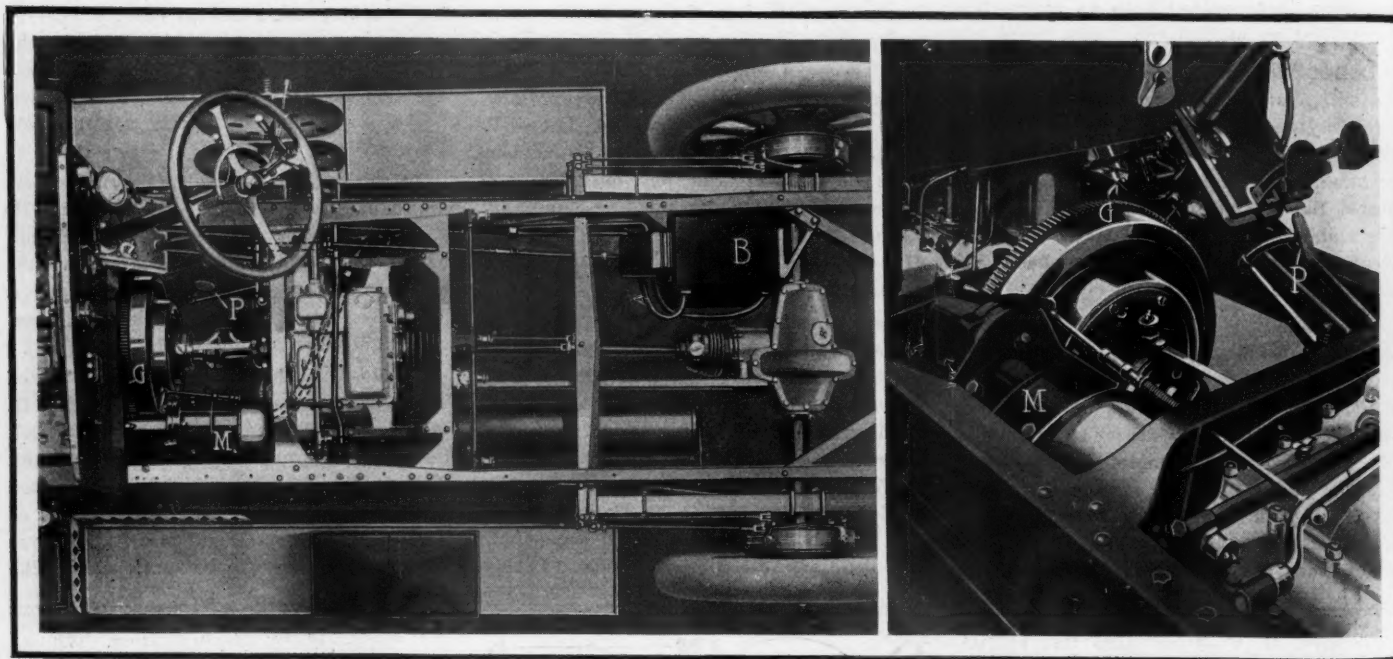
**Boston, Mass.**—A change has been effected in the agency for the American car in Boston. The Essex Automobile Co., that has handled the car for some years, relinquished the agency August 1 to a new firm, comprising Frank L. Roberts and Edward R. Sherbourne, who take it on as a side line. Temporary salesrooms have been opened at 121 Massachusetts avenue, the place just vacated by the Stutz, and a service station has been

secured on Bickerstaff street. Later on salesrooms will be secured on Boylston street.

**Milford, Mass.**—Nelson L. Huff, whose garage was burned with five cars recently, has arranged with the owners of the property to rebuild the structure and he will begin business again. He had no insurance and his loss will be very large.

**Vancouver, B. C.**—Two large motor garages were almost burned to the ground in the fire which raged for several hours on Main street August 12. The destruction of the cars stored in the garage of the Commercial Motor, Ltd., caused a loss of between \$150,000 and \$200,000, while the garage of the Tudhope Motors, Ltd., sustained a loss of about \$1,500. Neither of these firms has as yet decided whether it will rebuild.

## Peerless Using Gray & Davis Electric Self-Starter for 1913



GRAY & DAVIS ELECTRIC STARTER ON 1913 PEERLESS

SIX-CYLINDER cars made by the Peerless Motor Car Co. are hereafter to be equipped with an electric starting device. This starter is the design of Gray & Davis and is declared to be exceptional in its power and simplicity. The starter is installed in connection with the lighting system. It consists of an electric motor M carried on the frame just behind the engine, a 120-ampere hour storage battery B of special construction, and a constant speed dynamo for automatic charging. Pressure on a pedal P in the driver's compartment engages a gear on the motor with a gear ring G around the flywheel and turns the electric current into the motor. The flywheel is rotated rapidly. The device is capable of spinning the motor for  $\frac{1}{2}$  hour, it is asserted by the Peerless company. When the engine be-

gins to run on its own power the starter is automatically disconnected.

This electric starter differs from most of the others which employ electricity, in the fact that it has three chief units—dynamo, battery and motor. A more important difference is that the motor is operated by the 6-volt current which has become standard for lighting systems. The voltage required by most other electric starting systems is higher than 6. This requires that transformers be installed between the battery and the motor, and greatly complicates the device. In the Peerless starter the motor is connected to the rest of the system by a simple switch.

The device in tests by Peerless engineers has shown, it is said, sufficient power to get the largest Peerless car under way with high gear engaged and clutch set.

It has propelled the Peerless 48-Six  $\frac{1}{2}$  mile on the high gear and then there was sufficient power left to make hundreds of ordinary starts with clutch released. It has driven the 48-Six on second speed up a 7 per cent grade  $\frac{1}{8}$  mile long and again there was ample power for many starts. Under such circumstances cold weather hardly can prevent a suitable mixture being raised in the cylinder. But to quicken the process a priming pump is attached to the dash for use when conditions are especially unfavorable to carburetion. The starter operates at high efficiency, it is declared, owing to the fact that exceptionally large cables are used for connections and weight in battery generator and motor have been reduced as far as possible by the special designing.